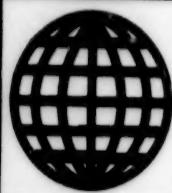


JPRS-TEN-94-009

7 April 1994



**FOREIGN
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JPRS Report

Environmental Issues

Environmental Issues

JPRS-TEN-94-009

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7 April 1994

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REGIONAL AFFAIRS

Lake Chad Summit Environmental, Political Issues Viewed

AB2203193394 Dakar PANA in English 1718 GMT
22 Mar 94

[By Paul Ejime]

[Text] Lagos, 22 Mar (PANA)—The eighth Lake Chad Basin Commission summit, opening Tuesday [22 March] in the Nigerian capital, would, in principle, have concentrated on the worrying shrinkage of water on what used to be the Lake Chad surface area. The reduced water surface, mineral resources, and environmental concerns are issues which affect all the organisation's four-member states—Cameroon, Chad, Niger and Nigeria.

It is likely, however, that these pressing problems might be overshadowed by the current border dispute involving Nigeria and Cameroon over the ownership of the 1000 square kilometre Bakassi Peninsula. The summit in Abuja, will take place against the background of intense diplomatic. [sentence as received]

Diplomatic sources in the federal capital and Lagos said that apart from the commission's agenda, the summit could be a prelude to the elusive summit between Abacha and Biya over oil-rich Bakassi in the Gulf of Guinea. According to the summit programme released by the Presidency in Abuja, Nigerian head of state, Gen. Sani Abacha was to receive Cameroonian President Paul Biya at the airport and later host the delegates, including those from Chad and Niger Republic to a state dinner.

Cameroon has said the bilateral summit was subject to the withdrawal of Nigerian troops from the disputed territory, while Nigeria insists that it would not pull out its soldiers.

Egypt, the current chairman of the Organisation of African Unity (OAU) had been previously mentioned as another possible venue for the summit. But according to political analysts, the venue of the eighth summit of the Lake Chad Basin Commission was agreed at the last summit in Abuja in 1993.

The commission was set up in 1964 as a forum for mutual exploration of the mineral resources in the Lake Chad region. It also serves as a platform for the resolution of border disputes among member states. One of such disputes involved Nigeria and Chad in 1983, which led to the establishment of a joint patrol team by both countries as an "interim measure for eventual proper demarcation of the common borders." The issue was eventually resolved at the 36th ministerial session of the commission in Maroua, Cameroon in 1989.

But of late, the lake region has come under what environmentalists called "indiscriminate human activities, especially the construction of dams," which threatens

the area with "extinction." The lake water is shrinking, and so are the mineral resources.

An environmentalist, Enoch Okpara, told a recent seminar in Lagos that "serious ecological deterioration has taken place and this has affected the flora and fauna of the lake region. The fish harvest and hence the nutritional health of the people of the countries who share the waters of the Chad (lake) are adversely affected," he said. In a paper titled "Environment Watch: How Do Nigerians Know," Okpara said the problem had accentuated migration with "unpleasant consequences on existing inadequate infrastructure in various urban centres acting as destinations for such migrants."

Quoting a recent environmental survey, he said that Nigeria alone "lost about 351,000 square km of its mass land to desertification, advancing southwards at an estimated rate of at least 0.6 km per annum." On the global level, Okpara said that the United Nations International Fund for Agricultural Development (IFAD), has warned that the world might "lose all its productive land mass if the current annual loss of 27 million hectares of its productive land to desertification" remained unchecked.

The UN body estimates that some 900 million people are afflicted by desertification worldwide, adding that the enormity of the problem required urgent international and local remedial measures.

Lake Chad Summit Ends; Environment To Be Protected

AB2403195094 Lagos Voice of Nigeria in English
1030 GMT 24 Mar 94

[Text] A joint security force that would safeguard life and property within the Lake Chad Basin area is to be set up soon. The force is to have political and logistics support from member nations of the commission. This is contained in a communique issued at the end of the eighth summit of the Lake Chad Basin Commission this morning in the Nigerian capital, Abuja. The establishment of the joint security force was agreed upon by the summit because of its belief that programs on the master plan of the commission can only be achieved in a secure environment.

The commission therefore decided on a rotational leadership for the joint security force with defined mode of human and material contribution by member states. The headquarters of the force will be at Bagakawa, in Borno State of Nigeria.

The summit also adopted a master plan designed to halt ecological degradation of the lake and its basin. The Nigerian head of state, General Sani Abacha, described steps taken by the commission in this respect as a significant milestone in the search for a lasting solution to a major environmental crisis. He said the master plan contained viable and sustainable strategies for the management and development of the natural resources of the

Lake Chad Basin. Gen. Abacha also explained that the water resources of the lake had reduced from 25,000 square km in the 1960's to 20,000 square km at present.

The summit admitted the Central African Republic as the fifth member of the commission. The inclusion of that country was in respect of its strategic location as the source of major rivers which are flowing to the Lake Chad.

The next summit of the commission is to be held in Chad next year.

Central African Republic Joins Lake Chad Basin Commission

AB2403141594 Dakar PANA in English 1321 GMT 24 Mar 94

[Text] Abuja, 24 March (PANA)—The Central African Republic, which attended the just-concluded eighth summit of the Lake Chad Basin Commission, in the Nigerian capital, Abuja, has been admitted as the fifth member of the commission.

A communique at the end of the two-day summit on Thursday [24 March], said the country's admission was based on its "strategic location as the source of major rivers which flows into Lake Chad." The statement also said that the summit, attended by Gen. Sani Abacha (Nigeria), Presidents Idriss Deby of Chad and Mahamane Ousmane of Niger, as well as Cameroonian Minister of State Frederick Kodock, agreed to set up a joint security force to "safeguard life and property" in the lake region. The force, to be based in Bagakawa, northern Nigeria, is to have "political and logistic support from member nations of the commission."

The communique said the need for the force became imperative because of the realisation that the objectives of the commission's programmes and master-plan "can only be achieved in a secured environment." "The commission therefore, decided to have rotational leadership for the joint security force with defined mode of human and material contributions of member-states," it added.

The master-plan adopted by the summit would seek to "successfully stop all forms of ecological degradations of the lake and its basin."

Launching a campaign to save the Lake Chad in Abuja on Wednesday as part of the eighth summit, Abacha said that the master-plan contained "viable and sustainable strategies for the management and development of the natural resources of the lake." He disclosed that the lake's water had "reduced from 25,000 square kilometres in the 60's to a meagre area of 20,000 kilometres at present."

The next summit comes up next year in Chad, headquarters of the commission, set up in 1964 for mutual exploration of the lake's natural resources and to ensure collective security in the region.

Niger Head of State Returns From Lake Chad Summit

AB2403194794 Niamey Voix du Sahel Network in French 1200 GMT 24 Mar 94

[Text] The head of state, Mahamane Ousmane, has just returned to Niamey from Abuja, where he took part in the eighth summit of the Lake Chad Basin Commission. He was welcomed upon arrival by Prime Minister Mahamadou Issoufou. The head of state said it was a historic summit, first because it focused on essential points including environmental issues, and then adopted a master plan on the development and management of the ecological issues of the Lake Chad Basin area. The master plan includes 36 projects, financed with a total of \$85 million, that is, 51 billion CFA francs.

Within the framework of these 36 projects, the head of state said that Niger is concerned with 25 projects. The master plan was adopted by the member countries and guidelines were given to the Executive Secretariat for implementation. This was one of the important decisions taken at the Abuja summit.

CENTRAL AFRICAN REPUBLIC

Patasse Returns From Lake Chad Summit, Comments

AB2503180094 Bangui Radiodiffusion-Television Centrafricaine Radio in French 1800 GMT 24 Mar 94

[Excerpts] President Ange Felix Patasse returned to Bangui this afternoon at 1425 aboard a special aircraft provided by the Federal Republic of Nigeria, after an 18-hour visit to Abuja, where he attended the eighth summit of the Lake Chad Basin Commission [LCBC]. In the VIP lounge of the Bangui-Npoko International Airport, President Patasse announced that the Central African Republic [CAR] had joined the LCBC. He stated this during an interview with Adrien Ngueya:

[Begin recording] Ngueya: Mr. President, you left Bangui yesterday and are back today. What was the CAR's interest in being at the LCBC summit?

Patasse: Before answering your question I would first of all like to discharge a duty, that of thanking the entire population of the CAR, and informing them that I have returned very comforted. This is because Africa has woken up. I would also like to thank Gen. Sani Abacha, leader of the Federal Republic of Nigeria, and the entire Nigerian people for the reception accorded me yesterday and this morning. [passage omitted]

As you know, the CAR is the main water source for the Lake Chad. As I speak, Lake Chad is in danger. From an initial area of 25,000 square kilometers, Lake Chad now covers only 1.5 square kilometers. Despite all that has been done, the encroachment of the desert and the sahel continues. The only thing we can do now is to try to save Lake Chad. Fortunately the heads of state of the LCBC

member countries understand that they cannot find solutions to Lake Chad's problems without the CAR.

In 1964 the countries bordering Lake Chad decided to create the LCBC. At that time there was plenty of water, and in our capacity as the then minister of rural development in this country, we called for the adhesion of the CAR to the LCBC. Our appeal was not heeded, and at that time we threatened to divert the waters of the Laou and the Louam to the south, but wisdom prevailed and today we have now become a member of the LCBC, not to ask for anything, but as a member who has something to offer. That is why the Abuja summit constitutes a decisive step on the way to true regional integration. The four member countries—Nigeria, Niger, Chad, Cameroon—(?border on) Chad Lake, but the CAR possesses the headwaters, which puts us in a privileged situation. That is why the heads of state asked for my presence, to know whether the CAR would like to be part and parcel of this commission. There will be some readjustments to make, because desertification is continuing, and it is not in our interest to let it encroach upon our respective countries. On this occasion we once again demonstrated our sense of solidarity [words indistinct]. All the member countries realized the looming danger, and we also stated that, since the CAR is the backbone of the Lake Chad basin and that of the Congo River, we will have a decisive role to play. That is why the heads of state are counting on the CAR, so that we can fully contribute to the achievement of this regional integration. We, therefore, hoisted the CAR flag among those of the LCBC member countries, and for us, within the framework of changes wanted by the CAR people, this membership in the LCBC is additional proof that we have recorded a victory. That is in a few words what I can tell you. I came back very (?satisfied). I spoke on behalf of the people of the CAR with pride and conviction that our country has a decisive role to play. The ideals of Boganda [deceased prominent political figure] and of the entire population of the CAR—who struggled for regional integration—are being proved correct each day. These are the ideals we have adopted.

That is why we want a dynamic and concrete diplomacy, and why we have to use our knowledge and experience, so that Central Africa, and in short Africa, can say that at last Africans have understood the situation and are now pooling their resources for the welfare of the entire African people. I thank you. [end recording]

Outside this summit, President Patasse and Chadian Head of State Idriss Deby held discussions this morning before leaving Abuja. Our colleague, Koudeyere Nokonk, who was present in Abuja, interviewed President Deby.

[Begin recording] **Nokonk:** Mr. President, the deliberations of the summit were suspended yesterday to wait for the CAR leader. Can you explain the reasons for that decision?

Deby: First of all I would like to air my views, that is, Chad's views, on the membership of the CAR in the LCBC. Chad is very happy about the CAR's new membership in the commission. It is a great event which contributes to the consolidation of the LCBC. In fact, we suspended the deliberations after the first plenary session at the level of the heads of state to wait for the arrival of my brother, President Patasse. This is because we know that the CAR's contribution to making decisions concerning the entire subregion is essential. There was also a need for the CAR to participate in decisions which had to be taken immediately after it joined the LCBC. Furthermore, Patasse was willing and fully ready to contribute, and that is why we deemed it useful to wait for him.

The arrival of President Patasse—who actively took part in very (?significant) deliberations yesterday evening, and in the decisions that you heard about and which continue (?to be commented) on—was a major event in all that can affect the commission's future. I am happy about that, and I think that we have (?strong) support within the LCBC, not only concerning the CAR's membership, but also thanks to the new dimension that we gave to the LCBC. [end recording]

Minister Notes Worsening Water Shortage*OW2203131494 Beijing XINHUA in English
1252 GMT 22 Mar 94*

[Text] Beijing, March 22 (XINHUA)—China's water shortage has worsened as a result of booming economic and social development and pollution, Chinese Minister of Water Resources Niu Maosheng said here today.

Speaking at a rally today marking the Second Annual World Day for Water, the minister said that China's per capita share of water reserves has been decreasing.

In China it amounts to 2,400 cubic meters per head, only about one fourth of the world's average and ranking 88th in the world, said the minister.

He attributed the booming economic and social development, population growth and pollution to the decrease.

According to the minister, China took the lead in the world by mapping out "China's Agenda 21," a national strategy for sustainable social and economic development, which gives priority to protection and efficient use of water.

The strategy was drafted in response to the call made by the United Nations Environment and Development Conference held in Brazil, which stressed protection of natural resources and sustainable development.

China has been investing heavily, and will continue to do so, in water conservancy projects, he added.

Work on preparatory projects for the huge Three Gorges Water Conservancy Dam on the Chang Jiang River is in full swing. The scheme will create the world's most powerful hydro-electric plant and a huge reservoir.

Work on other large water conservancy projects, such as Xiaolangdi and Wanjiashai, which it is estimated will cost billions of U.S. dollars, has begun or is soon to start.

Another costly diversion project has been listed on the agenda of the Chinese Government. It is designed to divert water from the Chang Jiang River northward to Beijing, Tianjin, Hebei Province and Henan Province, which are suffering from water shortages.

Romulo Garcia, acting resident representative of the United Nations Development Program (UNDP) in Beijing, said that in recent years UNDP had been involved in a number of initiatives to assist the government in its water related programs.

The programs include the northern China water management project, the rural water supply and sanitation in poor and remote areas project, and the assessment of China's water sector in Guizhou Province and master plan for the development of water resources in northern Xinjiang Uygur Autonomous Region.

The United Nations General Assembly resolved last year to have March 22 observed every year as the world day for water.

The United Nations estimates that 1.2 billion people still do not have access to safe water, he said.

Niu Maosheng added that over 50 countries or regions have a shortage of water, and water shortage has become a universal problem for cities all over the world.

XINHUA 'Feature' on Deforestation of Guangzhou*OW2203032394 Beijing XINHUA in English
0105 GMT 22 Mar 94*

[XINHUA "Feature": "Guangzhou in Green Deficit"]

[Text] Guangzhou, March 22 (XINHUA)—Guangzhou, one of the Chinese cities with the most dynamic economy, is now in a green deficit.

While roads are getting wider and skyscrapers are rising higher, trees and lawns are becoming rare in this capital of south Guangdong Province.

Even kapok, the city flower that once bloomed into a beautiful vision of red all over Guangzhou, is taking a good search to find.

Sources from the city bureau of parks and woods said the number of kapoks totals a mere 1,200 in the old town. Most of them are in streets and lanes too out-of-the-way to be seen by visitors.

The expansion of Dongfeng Road is regarded as one of the biggest and most successful projects in urban construction. It now runs from the east to the west end of the city and makes traffic much smoother.

However, walking, cycling or driving right under the scorching summer sun seems to be as irritating as sitting in the bygone traffic jams, and makes citizens long for the cool shadow of the trees that had lined the road for more than 25 years.

The sources said that more than one-third of the trees in the old town have disappeared in road expansion works in the past few years.

Experts from the bureau complained that the government and city planners seem to regard trees and lawns as mere decorative touches that can be easily obliterated whenever they come into conflict with construction.

For nearly ten years, the city's annual spending on the green cause has stagnated between two to three million yuan, which falls far short of a reasonable necessity, the experts claimed.

Considering that many Chinese cities are facing the same problem, the experts urged that China's city planners

and officials should learn more from their foreign counterparts, and give more space to green land in the concrete jungle.

The experts estimate that Guangzhou will need to invest over 500 million yuan before it can provide each citizen with five square meters of green land, as it plans.

Understanding that the city government alone can hardly supply all of the money, the experts called for all sectors of society to take actions before the green deficit becomes a green crisis.

Hebei To Protect Lake From Pollution

OW2303143694 Beijing XINHUA in English
1411 GMT 23 Mar 94

[Text] Shijiazhuang, March 23 (XINHUA)—Baiyangdian, the biggest inland lake in north China, will shine brighter as the local government has stepped up its effort to protect the 'Pearl of North China' from pollution.

Oxygen-consuming waste water discharged into the lake has dropped by some 40 percent in the past year, according to environmental protection officials from Baoding city, a dozen km from the lake in Hebei Province.

A working group set up in 1992 and headed by the mayor of the city is now responsible for controlling the flow of pollutants into the lake.

A sewage treatment plant that can use coal dust from a thermal power plant to recycle 50,000 tons of waste water discharged by a paper mill has recently been put into operation by the lakeside. The five-million-yuan plant is a model project supervised by the State Environmental Protection Agency.

Another two waste water treatment plants financed by the central and local governments and through a Finnish Government loan are now under construction. Each will be able to treat 80,000 tons of waste water a day.

In 1992, a paper mill and a chemical plant were closed down by the city government to reduce waste discharges into the lake.

Since 1990, factories in the area have had to pass environmental assessments by the government before being allowed to discharge waste into the lake. So far 45 factories have been licensed, according to the officials.

Greening Project Improves Zhejiang City Environment

OW2303094194 Beijing XINHUA in English
0650 GMT 23 Mar 94

[Text] Ningbo, March 23 (XINHUA)—People living in Ningbo, in east China's Zhejiang Province, now enjoy more green space and breathe cleaner air than before.

Over the past couple of years, the port city has been building itself into a "garden port."

The area where three rivers which run through the city converge has been transformed into a greenland densely covered with trees, bushes and grass, from the scene of ruin and desolation it presented only seven years ago.

While the focus of the greening project was on the river banks, trees have also been planted along more than 240 roads. Small greenery has also been added at more than 40 street corners.

There were only five little parks in 1978. Now the city has 17 parks, including a zoo.

NPC Announces Decision on Renaming Environmental Committee

OW2203201294 Beijing XINHUA Domestic Service
in Chinese 0838 GMT 22 Mar 94

[Text] Beijing, 22 Mar (XINHUA)—Decision of the National People's Congress [NPC] on Renaming the NPC Environmental Protection Committee the NPC Environmental and Resources Protection Committee

Adopted by the Second Session of the Eighth NPC on 22 March 1994

The Second Session of the Eighth NPC has deliberated a bill on changing the name of the committee submitted by the NPC Environmental Protection Committee on changing the NPC Environmental Protection Committee to the NPC Environmental and Resources Protection Committee, and has decided to rename the NPC Environmental Protection Committee the NPC Environmental and Resources Protection Committee.

Tibet Devotes 'Great Efforts' To Protecting Wildlife

OW2403134694 Beijing XINHUA in English
1323 GMT 24 Mar 94

[Text] Lhasa, March 24 (XINHUA)—The Tibet Autonomous Region has devoted great efforts to protecting the wildlife in recent years.

To protect wild animals in Tibet, known as "the roof of the world," the regional government set up the Tibet Regional Association for Wildlife Protection in 1991 and issued "Tibet Autonomous Region's Regulations for Implementation of 'The Wildlife Protection Law of the People's Republic of China'" in 1992.

An official of the association said that Tibet is one of the regions rich in wildlife resources. There are more than 5,700 plant species, 2,300 species of insects, 64 kinds of fish, 488 kinds of birds and 142 species of mammals native to the region.

Tibet is also the habitat for 125 kinds of rare wild animals on the state's list for protection.

In recent years, Tibet has set up 13 nature reserves for protecting 10,000 wild yaks, more than 50,000 wild donkeys, about 50,000 Tibetan antelopes, 650 golden monkeys, 1,500 black-necked cranes and 3,000 takins, a type of wild cow found in Tibet.

Liu Wulin, deputy general secretary of the Tibet Regional Association for Wildlife Protection, says the effort shows that most Tibetans realize the importance of protecting wildlife.

He said that with the joint efforts of the government and the people, the total rare animal resources have increased by 30 percent.

State Council Concerned Over Three Gorges Rock Instability

*OW2803082194 Beijing XINHUA in English
0739 GMT 28 Mar 94*

[Text] Yichang, March 28 (XINHUA)—Since February this year, China has started work to harness a dangerous rock formation within the Three Gorges area on the middle reaches of the Chang Jiang River where a huge water-control project is to be built.

Containment measures are being pursued with the aim of ensuring safe navigation through the Three Gorges area and protecting the projected reservoir.

The rockface, nicknamed the "Huangla Stone" with a total volume of 40 million cu m, is located at the juncture of the Xiling and Xixia gorges and is only 64 km away from the area where the gigantic water control dam is to be built.

According to experts, the rocky outcrop is the most dangerous spot in the Three Gorges, with increasingly frequent slippage and poor stability in the main body of the rock heightening concerns over the past few years. Extended rains or a jarring earthquake in the region would be likely to cause the Huangla Stone to fall into the Chang Jiang River, triggering waves as high as 20-80 m to surge along the river.

Moreover, if the rock happens to break loose, it will not only destroy the Badong County seat and nearby villages and farmland, but also block the entire navigable route of the Yangtze, bringing navigation of ships in the area to a standstill. In addition, several million tons of silt may follow the landslide into the Yangtze, further worsening water pollution in the river, said the experts.

The State Council, China's central government, has attached great attention to the harnessing of the dangerous rock. Before the official launching of containment work, experts from nine national organizations were recruited to carry out research on the feasibility of harnessing the rock.

According to Qu Xingyuan, chief of the headquarters in charge of Huangla Stone harnessing, they have adopted the method of building drainage projects on the surface

of the ground and below the ground, in a bid to improve and enhance the stability of the rock.

In nearby areas where landslides are most likely to occur, facilities with the functions of holding water back from the surfaces and draining water from inside have also been built to forestall landslides.

So far, more than 500 workers have taken on the harnessing work, digging out 5,500 cu m of earth and building 2,300 m of drainage canals. The first-phase harnessing work is expected to be completed in May.

State Council Meeting Approves 'Agenda 21' White Paper

*OW2503154694 Beijing XINHUA in English
1330 GMT 25 Mar 94*

[Text] Beijing, March 25 (XINHUA)—China's "Agenda 21," a white paper on population, environment and development in the 21st century, was approved by the State Council today.

The agenda was discussed and adopted at the 16th Executive Meeting of the State Council presided over by Premier Li Peng.

China is the first country to have worked out and adopted its own "Agenda 21," proposed by the United Nations at the Rio de Janeiro summit meeting in June 1992.

At the summit, Premier Li Peng promised to carry out the UN Agenda and other documents adopted at the meeting.

China initiated and sponsored the ministerial meeting on environment and development for developing countries in June 1991.

The "Agenda 21" was worked out by 52 departments under the State Council, including the State Planning Commission and the State Science and Technology Commission.

The "Agenda" expounds China's strategy, policy and measures to secure harmonious and sustainable development out of the milieu of the economy, resources, environment, population, education and other social factors.

The "Agenda" will also be an important directory document for China in making its mid- and long-term economic and social development plans. It will form an important part of the goals and content of the Ninth Five-Year (1995-2000) and the 2010 plans.

The "Agenda" made clear the position and actual action of the Chinese Government in implementing the UN Agenda 21.

Today's meeting of the State Council also adopted an outline program of state industrial policies for the 1990's.

HONG KONG

China Criticizes Government Over Zhuhai Sewage Project

HK2503053994 Hong Kong SOUTH CHINA
MORNING POST in English 25 Mar 94 p 2

[By Chris Yeung in Beijing]

[Text] A new political row has blown up between China and Hong Kong—this time over plans to dump sewage in Zhuhai waters. China said the government had acted irresponsibly and had misled the public over the \$12 billion sewage treatment project. It said the project should not have been given the go-ahead without consultation with the Sino-British Joint Liaison Group (JLG).

A Hong Kong and Macao Affairs Office official said, if it went ahead, the urgent task of solving the territory's worsening water pollution would run into trouble. "We have already demanded the issue be discussed at the coming JLG full meeting," he said.

"The British side said they can go ahead with phase one of the project that will be completed before 1997 and will only discuss with us the second phase that straddles 1997."

"But does that make sense? The project cannot be cut in two. It should be considered as a whole."

"We are not trying to block the project. We do want immediately to do something to stop further pollution of the waters in Victoria Harbour. The worsening pollution has not only caused red tide in Hong Kong but also poisoned aquatic products in the Pearl River Delta region," he said. "Government officials were misleading the public when they said we had no dissenting views on the project," the official said. Rather, he said, the Chinese were surprised by the decision of the government to launch the project with the recent award of a contract involving hundreds of millions of dollars.

The government said yesterday that China had not been formally consulted on the project because a preliminary survey was being carried out with the help of mainland authorities to see whether the project was technically feasible and environmentally acceptable. "We are not yet in a position to apply to the Chinese side for construction of the second phase of the project," said Principal Assistant Secretary for Environment Chang King-yiu.

If the government could confirm that there were good grounds to go ahead with phase two of the project, it would officially apply to the Chinese side to conduct a joint environmental impact study. Under the strategic sewage disposal scheme, the government expected the facility to extend beyond the southern side of Hong Kong waters. "The final alignment has yet to be decided," she said.

According to the mainland official, the project envisaged a huge marine underwater pipeline with a total length of dozens of kilometres to be built linking Stonecutters Island with Tangangdao in Zhuhai. At least several hundreds of tonnes of sewage would be discharged into the waters off the Tangangdao. "Some people in Hong Kong have already criticised that as an unethical project. Discharging the sewage water in your neighbours' place is simply unreasonable," he said. According to international law, a government wanting to build a pipeline in another country's waters has to seek that country's consent.

The official said the Hong Kong and Macao Affairs Office has organised a team of researchers to examine the issue including the hydrology of the Pearl River Delta. Some basic studies on the treatment of sewage in the territory have already been completed, he said. The official claimed that the Chinese Government proposed in August last year the issue of conducting a detailed feasibility study on the sewage project and the corresponding assessment on its environmental impact be put on the agenda of the JLG. He said the British side agreed to do so only early this month, but soon granted contracts for the project.

JAPAN

Radioactivity-Monitoring Ship Heads for Sea of Japan

OW2203032694 Tokyo KYODO in English 0311 GMT
22 Mar 94

[Text] Niigata, March 22 KYODO—A Russian-registered oceanographic survey ship left here Tuesday [22 March] on a mission to monitor the effects on the Sea of Japan of radioactive waste dumping by a vessel of the Russian Pacific Fleet last year, Japanese Government officials said.

The dispatch of the 4,162-ton Okean by Japan, Russia and South Korea was called for by a conference of scientists held in the Russian far east city of Vladivostok last month.

The Okean carries nine Japanese Government officials and 27 scientists from South Korea, Russia and the Vienna-based International Atomic Energy Agency.

The voyage is the first joint research effort by the three countries to study whether the sea is contaminated by radioactivity.

Seawater and seabed sediment samples will be collected by the Okean at seven points and measured for radioactivity, the officials said.

The Russian Navy on October 16 and 17 last year dumped 900 tons of liquid nuclear waste in the Sea of Japan. A planned second dumping was canceled following protests from Japan and South Korea.

Hosokawa Says PRC Minister To Visit on Ibis Breeding Issue

OW2103234894 Tokyo KYODO in English 2333 GMT 21 Mar 94

[Text] Tokyo, March 22 KYODO—China's Forestry Minister Xu Youfang will visit Japan in May for talks on Japan's request for the loan of a pair of ibis for breeding, Prime Minister Morihiro Hosokawa told reporters during his return flight from China to Tokyo.

Hosokawa made the request for the birds to Chinese Premier Li Peng on Sunday [20 March].

Hosokawa told Li there is only one pair of ibis left in Japan and they are too old for artificial breeding, Japanese officials said.

He asked China to lend Japan a pair for breeding as there are some 40 captive ibis in China that have either artificially or naturally produced offspring, they said.

Hosokawa said State Planning Commission head Chen Jinhua told him on Monday morning in Beijing that China will dispatch the forestry minister, who is also in charge of environmental issues, to Japan in May for talks with his Japanese counterparts.

Chen expressed China's readiness to help on the ibis breeding issue as a way of promoting China-Japan friendship and environmental cooperation, Hosokawa said.

Hosokawa Panel Considers How To Protect Global Environment

OW2303024194 Tokyo KYODO in English 0149 GMT 23 Mar 94

[Text] Tokyo, March 23 KYODO—A private panel to Prime Minister Morihiro Hosokawa on Wednesday [23 March] began debating ways for Japan to contribute to the protection of the global environment toward the 21st century.

The group, chaired by Jiro Kondo, president of the Science Council of Japan, will meet once a month, except for August, and put forward recommendations to the premier by the end of the year.

Kondo told reporters the panel will focus on civilization, science and technology and ways for its conclusions to be reflected in the government's environmental policies.

The other members of the panel include Yoshinobu Ashihara, an architect and professor emeritus at the University of Tokyo, Kazuo Inamori, chairman of Kyocera Corp., poet Machi Tawara, and Etsuya Washio, general secretary of the Japanese Trade Union Confederation.

Wednesday's meeting was also attended by Hosokawa, Chief Cabinet Secretary Masayoshi Takemura and two deputy chief cabinet secretaries, Yukio Hatoyama and Nobuo Ishihara.

SOUTH KOREA

Article Assesses Effects of UN Convention on Climate Change

SK2203041694 Seoul THE KOREA TIMES in English 22 Mar 94 p 3

[Text] The United Nations Framework Convention on Climate Change (UNFCCC), designed to prevent the greenhouse effect which causes global warming, formally went into effect yesterday.

Since virtually all types of industrial and other commercial fuel give off carbon gases, South Korean stands to be hit hard by the convention, especially with the massive number of cars and conventional heating systems.

The convention, which currently has 51 signatory countries, is aimed at curbing the emission of carbon dioxide and other greenhouse gases on a gradual basis throughout the world.

South Korea became a signatory to the convention last December as the 46th country to do so and the convention, should it be in the near future be regarded as an advanced country, could pose as a serious problem.

According to officials of the Foreign Ministry's Science Environment Section, the main cause of global warming has been identified as carbon dioxide and the convention reflects advanced countries' eagerness to halt further change in the climate, especially in terms of temperature.

However, there has already been sharp criticism from developing countries on pressure for them to join up since they believe that most of the greenhouse effects have been caused by advanced countries themselves.

"Although it is difficult to determine who is actually responsible for the changes in climate resulting from pollution, chances are that they began long before industrialization actually began to take place in countries which are currently classified as developing, including Korea," one official noted.

Developing countries realize that the emission of carbon dioxide and other greenhouse gases is inevitable in the process of further industrialization and they have been demanding differential treatment.

For Korea, however, the problem is not so simple. It is scheduled to apply for admission to the OECD (Organization for Economic Cooperation and development) in 1996 and it would have to express greater willingness to conform to the standards in advanced countries.

Statistically, the per capita emission of carbon dioxide was measured at about 1.6 tons in 1990, considerably less than the 2.4 tons in Japan and 5.8 tons in the United States.

Since the convention stipulates that countries in group one, in which Korea is not yet included, must reduce the level of emission to that in 1990 by the year 2000, which would be an enormous task for the government and industry.

The non-law-binding convention seeks to establish the basic guidelines for the reduction of greenhouse gases and deal with problems relating to the provision of financial and technological assistance to developing countries.

Advanced signatory countries are obliged to obtain an exact estimate of the existing emission volume of the pertinent gases and report it to the convention's negotiating committee along with specific timetable for their reduction.

Developing countries, on the other hand, have a period of three years to do the same although they have been insisting that their timetable would depend on the extent of financial and technological assistance from advanced countries.

Government To Advance Date of Ozone Protection Measures

SK2403030594 Seoul YONHAP in English 0146 GMT
24 Mar 94

[Text] Seoul, March 24 (YONHAP)—South Korea will uphold the amendment to the global agreement on protecting the ozone layer this June pushing up the date banning all use of chlorofluorocarbons (CFCs), the Foreign Ministry said Thursday.

The Copenhagen Amendment to the Montreal Protocol, signed by 20 countries, goes into effect June 14 and South Korea will submit to the amendment soon afterwards, the ministry said.

The revised version sets down an earlier date to eliminate all use of chemicals destructive to the ozone layer such as CFCs and halon.

These chemicals are used as coolants in refrigerators and air conditioners. CFC use will be banned as of Jan. 1, 1996, while use of halon was to cease Jan. 1 this year.

South Korea, however, belongs to the developing nation category and is exempt from these deadlines. The Copenhagen Amendment excludes a ban date for developing countries and members are to decide next year on another set of guidelines.

ROK President on Environmental Cooperation

SK2503023894 Seoul YONHAP in English 0227 GMT
25 Mar 94

[Text] Tokyo, March 25 (YONHAP)—South Korean President Kim Yong-sam proposed Thursday [24 March] that his country, Japan and China work together to control environmental pollution and promote joint study of oriental medicine and other projects.

Kim made the proposal during a breakfast meeting at the guest house with Korean correspondents stationed here.

Declaring that Korea, Japan and China are the three most important nations in Asia, Kim said they must undertake joint study of their common culture based on Chinese characters.

As China is rapidly undergoing industrialization, Kim said the Yangtse River, which runs into the West Sea, is becoming more polluted and the three countries must tackle the problem immediately. The Chinese Government has already agreed to his proposal at the working level, Kim said.

LAOS

Minister Says Power Firms Must Preserve Environment

BK2803025594 Bangkok BANGKOK POST in English
28 Mar 94 p 30

[By Chatrudi Theparat in Vientiane]

[Text] PRIVATE companies seeking to participate in Laotian hydroelectricity projects may be rejected if they do not provide adequate planning for environmental conservation, Laotian PM's Office Minister Phao Bounnaphon said in Vientiane.

With 10 new hydroelectric dam projects planned, which aim to produce about 1,300 MW of electricity at a cost of billions of dollars, the issue of preserving the environment and avoiding the mistakes of the past is becoming more important to Laos, he said.

Feasibility studies for most of the projects have been completed. Most of their output will be sold to Vietnam and Thailand. The investment cost per unit of hydroelectric power is lower than that of plants using other types of fuel.

Mr Phao said Laos will be a significant energy source in Southeast Asia because it has enormous mineral deposits and potential for hydroelectric power. Laos aims to protect its forests, so only private firms that want to protect and revive the environment will be welcome.

Vatthana Pathoumvan, manager of the Electricite Du Laos (EDL) hydroelectric station at Nam Ngum, said feasibility studies will be completed next year, so no details are yet available.

However, he said, construction depends on the demand for electricity in neighbouring countries, especially Thailand. Of the 220 MW of hydroelectric power generated by Laos, 70 percent is sold to Thailand.

Apart from the Sedone I and II projects in Pakse province, which are being undertaken by Korean firms, Thai MDX Co is undertaking feasibility studies of the Nam Ngum II and III projects.

The executive manager of EDL, Ungreun Pakan, said the Laotian Government is concerned about environmental problems because it had trouble during the first stage of Nam Ngum I.

However, Laos is lucky that it has low population growth, so the government has no problems moving people to make way for construction of power plants, he claimed.

MALAYSIA

Mahathir Views Industrial Waste Dumping

BK2403012494 Kuala Lumpur Radio Malaysia Network in English 1300 GMT 23 Mar 94

[Text] Datuk Sri Dr. Mahathir Mohamed says the industrialized countries should not obstruct any effort to impose a total ban on the dumping of industrial waste in Third World countries, particularly Asia. The prime minister said that those countries should in fact take steps to end the export of industrial waste to developing countries. He felt that industrial waste should not be exported to developing countries because [words indistinct].

He told reporters this after visiting the Kuala Lumpur Tower project at Bukit Nanas in Kuala Lumpur. Dr. Mahathir was asked to comment on the claim by Green Peace, an environmental protection group, that seven industrialized countries oppose the efforts to impose a total ban on the export of industrial waste to Third World countries. The countries are Australia, Britain, Canada, Germany, Holland, Japan, and the United States.

PAPUA NEW GUINEA

Foreign Logging Companies Smuggle Out Tropical Timber

BK2703133194 Melbourne Radio Australia in English 1100 GMT 27 Mar 94

[Text] Papua New Guinea's [PNG] Minister for Forest Tim Neville says foreign logging companies smuggled about \$120 million worth of tropical timber out of the country during 1992. He made the claim at a seminar in Lae for visiting Queensland businessmen, while outlining his plans to ban tropical log exports from PNG by the year 2000. Sean Dorney reports that Mr. Neville said

these plans will include paying up to about \$6 million a year for monitoring of exports.

[Begin recording] Dorney: The forest minister said Papua New Guinea was about to engage the Swedish surveillance company, SGS, to monitor all PNG's log exports. Mr. Neville said SGS did similar work in 27 other countries and the cost would be more than covered by the revenue that he said was being currently stolen by unscrupulous foreign logging companies. He said the officials figured the log exports in 1992 accounted for only about two-thirds of what his department estimated was felled and shipped away.

Neville: So in 1992 alone, we lost in the order of about 700,000 cubic meters of timber, which if we work that out on current log exports price, they are averaging 170 kina [PNG currency] per cubic meter.

Dorney: That amounted to about US \$120 million. [End recording]

TAIWAN

CITES To Decide on Trade Sanctions 25 March

OW2203082794 Taipei CNA in English 0723 GMT 22 Mar 94

[By Hao Hsue-ching and Y. C. Tsai]

[Text] Geneva, March 21 (CNA)—The Convention on International Trade in Endangered Species (CITES) will decide whether to call for trade sanctions against Taiwan on March 25, CITES Standing Committee Chairman Murray Hosking said Monday [21 March].

Hosking pointed out that the committee, which opened its meeting in Geneva Monday, will discuss on Tuesday the alleged trade in rhino horn and tiger bone in Taiwan, Mainland China, Hong Kong, South Korea, and Yemen.

Hosking pledged that the committee would take into account Taiwan's progress in wildlife protection before making a final decision on trade sanctions.

Taiwan police reportedly visited 519 herbal medicine stores out of 8,000 on the island March 15-17 and found seven selling rhino horn powder and 27 selling tiger bone.

The findings run counter to allegations by Britain's Environmental Investigation Agency (EIA), which claimed that rhino horn powder and tiger bone are still available at more than half of all Chinese medicine shops in Taiwan.

Meanwhile, during a meeting of non-government organizations (NGO) following the CITES Standing Committee meeting on Monday, EIA aired a 20-minute videotape which said more than 90 percent of the rhinoceros killed in South Africa were for the Taiwan market.

The Earth Island Institute (EII) and the World Wildlife Fund also said Taiwan, Mainland China, Hong Kong, South Korea, and Yemen conduct trade in illegal wildlife products.

Li San-wei, deputy director of the Forestry Department under Taiwan's Council of Agriculture and leader of the Taiwan delegation to the NGO meeting, noted that he was unable to rebut EIA's accusation as he spoke before the videotape was shown.

"How could they verify their claims," Li asked.

Another delegation member, Chairman Ted Ting of the Beautiful Taiwan Foundation, worried that the shocking videotape would increase the chances that Taiwan will be slapped with CITES sanctions.

Moreover, Ting noted, any CITES decision will strongly influence the United States, which will make a similar decision next month.

In order to avoid an economic boycott, Taiwan will ask delegates from other countries to help defend its wildlife conservation efforts at the CITES Standing Committee's Tuesday meeting, Li said.

As a non-CITES member, Taiwan could only attend the EIA-sponsored NGO meeting.

ROC Reacts To CITES Name Change

*OW2303100894 Taipei CNA in English 0733 GMT
23 Mar 94*

[Text] Taipei, March 23 (CNA)—The Republic of China [ROC] will never accept the Convention on International Trade in Endangered Species (CITES) decision to refer to Taiwan as "Taiwan, China," Foreign Affairs Minister Chien Fu said Wednesday [23 March].

Chien was responding to reports from Geneva saying that the CITES Standing Committee has yielded to Beijing's pressure and decided to refer to Taiwan as "Taiwan, China" in its report on wildlife conservation on the island.

"Such a decision is ridiculous," Chien said, stressing that Taiwan is a separate political entity and has never been ruled by Chinese communist authorities.

Chien said Beijing's intention to downgrade the ROC in the international arena by suggesting the use of such a designation in the CITES report would only worsen relations across the Taiwan Strait and would not alter the fact that Taiwan is a separate political entity.

Beijing has consistently claimed sovereignty over Taiwan and sought to limit Taiwan's movements on the world stage.

The Council of Agriculture (COA), which is in charge of wildlife conservation affairs, said it will protest the CITES decision.

"If CITES does not use our formal national title in its report, we hope it can at least refer to us as Chinese Taipei," COA Vice Chairman Lin [words indistinct] said.

CITES Chairman Urges Continued Conservation Efforts

*OW2303100494 Taipei CNA in English 0716 GMT
23 Mar 94*

[By Tzou Ming-jie]

[Text] Geneva, March 22 (CNA)—The chairman of the Convention on International Trade in Endangered Species (CITES) Standing Committee said Tuesday [22 March] that Taiwan has made substantial progress toward wildlife conservation but must continue crack-downs on trade in rhino horn and tiger parts.

Chairman Murray Hosking, speaking during a meeting of the CITES Standing Committee, noted that officials in Taiwan are taking wildlife conservation very seriously as evidenced by amendments to the Wildlife Conservation Law which significantly increase fines and penalties for violators and establishment of a wildlife protection unit.

He added that CITES was satisfied with the amendments to the law, but reserved final comment until an English-language translation of the bill is given to the CITES Secretariat.

Hosking also said CITES was satisfied that Taiwan is working to consolidate government stockpiles of endangered species products and has established a database for the registration, marking and sizing of confiscated stocks of rhino horn or tiger parts.

South Africa Raps EIA for False Accusation on Rhino Horns

*OW2303100394 Taipei CNA in English 0707 GMT
23 Mar 94*

[By Chang Jer-shong and Y. C. Tsai]

[Text] Johannesburg, March 22 (CNA)—South African police on Tuesday [22 March] rapped Britain's Environmental Investigation Agency (EIA) for falsely accusing a Taiwan diplomat of involvement in rhino horn trade.

Pieter Lategan, chief of the Endangered Species Protection Unit (ESPU) under the South African Police Administration, said the Republic of China [ROC] Embassy and the Republic of China's National Police Administration have worked closely with the ESPU on wildlife protection.

None of the embassy officials or vehicles were ever involved in rhino horn smuggling, Lategan said.

Moreover, he noted, no one from the ESPU has ever been interviewed by the EIA.

The South African official said he has phoned the EIA to express his strong dissatisfaction at the accusations. In addition, he has sent a letter to the London-based conservation group requesting a detailed explanation of the accusations.

During a meeting of nongovernment organizations (NGO) following the Standing Committee meeting of the Convention on International Trade in Endangered Species (CITES) in Geneva Monday, the EIA aired a 20-minute videotape, in which a South African policeman charged Taiwan envoys with smuggling rhino horns.

A statement issued by Taiwan's Ministry of Foreign Affairs Tuesday said the man accused of rhino horn smuggling was not a diplomat but an Overseas Chinese who once worked as a member of the Control Yuan, Taiwan's highest watchdog body.

The man, Yen Nuo, was [word indistinct] in South Africa in February 1986 for illegally trading in rhino horns, but was found not guilty as Yen had a license to sell rhino horns issued by the South African Government.

Meanwhile, a report from Geneva said the CITES Standing Committee has decided to ignore the EIA's accusations.

Prime Minister Criticizes UN Conservation Organization

OW2503080994 Taipei CNA in English 0728 GMT 25 Mar 94

[By Sofia Wu]

[Text] Taipei, March 25 (CNA)—Premier Lien Chan Friday [25 March] expressed regret over a preliminary decision by a United Nations wildlife conservation organization suggesting its members adopt stricter measures against Taiwan for failing to eliminate illegal trade in endangered species.

Commenting on reports from Geneva saying the UN's Convention on International Trade in Endangered Species (CITES) has accused Taiwan of failing to crack down on illicit wildlife trade in an expedient manner, Lien said the allegation was unfair.

"Taiwan has not fallen behind world wildlife conservation standards," Lien said. "We hope major world wildlife conservation organizations can recognize our efforts in this regard."

The CITES Secretariat Thursday unveiled a package of 14 suggestions on how to eliminate rhino horn and tiger bone trade in Taiwan, Hong Kong, South Korea, Mainland China and Vietnam.

The package generally gave positive, lenient assessments of wildlife conservation efforts in Hong Kong, South Korea, Mainland China and Vietnam, but took a harsher attitude toward Taiwan.

It said Taiwan has so far failed to update its conservation law, complete consolidation of rhino horn and tiger bone stockpiles and totally eliminate rhino horn trade. It thus recommended that "all CITES parties implement stricter domestic measures against Taiwan, including prohibition of trade in wildlife species."

The CITES Standing Committee, which is meeting in Geneva, will continue to discuss the package Friday afternoon and will decide whether to formally recommend trade sanctions on Taiwan over conservation issues.

Local trade officials said if CITES does call on its members to ban wildlife trade with Taiwan, the impact would be minimal.

Taiwan's wildlife product trade totals about US \$20 million annually, according to statistics compiled by the Board of Foreign Trade.

However, the board pointed out that if the United States decides to impose trade sanctions on Taiwan in line with the CITES recommendation, the effect would be much greater.

The U.S., Taiwan's largest export outlet, could first ban wildlife product trade with Taiwan and if Taiwan fails to improve crackdowns on illicit wildlife trade within six months, the U.S. then could ban imports of other Taiwan products, the board said.

Meanwhile, Chairman Sun Ming-hsien of the Council of Agriculture said Taiwan has made enormous efforts in wildlife conservation in recent years. "We'll step up publicity to help the world understand our progress in this regard," Sun noted.

THAILAND

U.S. Urged To Delink Trade From Environment, Rights, Labor Issues

BK2803021894 Bangkok BANGKOK POST in English 28 Mar 94 p 22

[Text] The United States should separate trade matters from issues of human rights, labour rights and the environment, according to Deputy Prime Minister Suphachai Panitchaphak.

These issues should be left to the international organisations that are already dealing with them, Mr Suphachai said.

Dr Suphachai was speaking at the 21st meeting of the U.S. Information Service's annual economic seminar entitled "Regionalisation of Thai-U.S. Economic Relations".

He told Business Post that it is possible to look at trade issues on their own merits by decoupling them from side issues.

"Trade should be treated on its own merits, linked with real macroeconomic issues, and side issues that are now coupled with trade such as human rights, workers' rights and the environment should be left to international organisations that are already dealing with them," he said.

He said a country that is trying to achieve greater economic development will try its best to improve standards of human rights and labour relations.

"Through trade development expansion we can facilitate the process of paying adequate attention to human rights development," he said.

If some of the major side issues are put in the forefront, such as the U.S. linking of the Generalized System of Preferences with labour rights, it may not bring results in the end, he said.

The GSP was conceived to help developing countries' exports by granting concession terms, and is not supposed to be linked with anything, he said.

He said he understood the good intentions of the U.S. administration which has a sense of humanity and is justifiably concerned with rights.

But he questioned whether its policy is the most effective way of conditioning the whole world to move in that direction.

Dr Suphachai said the more we want to promote trade and economic relations throughout the world the more we must work toward depoliticising trade issues.

This will benefit not only the private sector but also the newly emerging countries, as at least world economic growth will be more predictable than in the past, he said.

Dr Sean Randolph, the managing director of RSR Pacific Group, a consulting firm specialising in business development in Asia, Latin America and the Pacific, presented a report on a U.S. perspective on the Asia Pacific economy.

Dr Randolph, the former international director-general of the Pacific Basin Economic Council, said after the seminar that the U.S. may not be able to take full advantage of the tremendous growth potential of Asia if the U.S. does not extend Most-Favoured-Nation trading status to China.

The extension of MFN will help China get equal treatment from the U.S. with other members of the General Agreement on Tariffs and Trade, he said.

U.S. President Bill Clinton must certify to Congress by June 3 that China is making "significant overall

progress" on human rights before deciding to extend MFN to China for a further year.

Dr Randolph said the US business community strongly supports the extension of MFN to China.

The American Chamber of Commerce in Beijing estimates that 167,000 American high-technology jobs are linked to exports to China.

U.S. law should be changed to completely decouple the issues of trade and human rights, Dr Randolph said.

"I personally share the U.S. business community's view that engagement with the Chinese and expansion of the market economy is a more effective means of improving human rights than the laying down of political markers," he said.

He addressed the issue of the U.S. Trade Representative's recent suspension for six months of its formal workers' rights review in order to give the Indonesian government time to implement adopted labor regulations and to take future measures in the labour field.

He said the US business community wants the U.S. Government to continue granting GSP to Indonesia unconditionally.

Asia is becoming an interesting region for the U.S. because of its rapid growth in terms of real trade and investment. Asia's share of global commerce has doubled from 7.5 percent to 14 percent over the past decade.

The economic growth of countries in the region, excluding the U.S. and Japan, is expected to be 5.9 percent this year according to the Pacific Economic Cooperation Council.

Asia is important to U.S. business for many reasons, including the massive demand for infrastructure, electricity generation, telecommunications and aircraft, particularly in China.

Retailing has great potential because consumer spending in Asia is expected to grow three times faster than Europe or the U.S.

The potential for investment in China, which has now become the world's fourth "growth pole" after Europe, North America and Japan, is great.

The capitalisation growth of regional stock exchanges, excluding Japan and China, is expected to be US \$3.3 trillion by 2000, up 433 percent on today's level.

However, Dr Randolph pointed out that Asia faces difficult issues including political crisis, the policies of the big economies like the U.S. or Japan the mismanagement of the nuclear issue in Korea, and the possible suspension of MFN status to China.

BULGARIA

Nuclear Accident Information Exchange Accord With Turkey

AU2403122194 Sofia NOVINI 5 in Bulgarian
21 Mar 94 pp 1, 3

[Staff report: "Bulgaria, Turkey To Mutually Inform Each Other About Nuclear Accidents"]

[Text] An agreement on exchanging operational information regarding nuclear installations is to be signed between Bulgaria and Turkey. The negotiations related to the agreement have been completed. The draft agreement was approved by the Council of Ministers in 1991. It will positively affect bilateral relations with Turkey and will serve as the basis of cooperating in utilizing nuclear energy, the experts of the Committee on Peaceful Use of Nuclear Energy think.

The Ministry of Foreign Affairs, the Environment Ministry, the National Electricity Company, and the Kozloduy Nuclear Power Plant have already conveyed their recommendations and have approved the agreement. It will be identical to the agreement with Greece, which has been signed and ratified.

The agreement does not relate to admissible concentrations of radioactive substances according to the national norms. Once a year the sides will exchange information about radioactive particles which have found their way into the environment. There will be a one-time exchange of information regarding the nuclear installations. However, the validity of this information will be confirmed every January.

HUNGARY

Green Alternative Official Views Tasks, Election Prospects

AU2303172994 Budapest PESTI HIRLAP
in Hungarian 23 Mar 94 p 5

[Interview with Erzsebet Schmuck, cochairman of the Green Alternative Party, by Daniel Bodnar; place and date not given: "The Concept of the Green Alternative: Natural Harmony"]

[Text] The Green Alternative Party [ZA] was established on Environmental Protection Day on 5 June 1993. The creation of this party was justified by the fact that the Hungarian Green Party kept drifting to the right and, therefore, the environmental and nature protection movements in Hungary distanced themselves from this party. The fact that the Federation of European Green Parties accepted the ZA among its members represents an appreciation for the party's activity so far. We interviewed Erzsebet Schmuck, cochairman of the ZA.

Bodnar: What is the goal of your party?

Schmuck: Our main goal is to send an adequate number of deputies into Parliament and, later, also to the self-government bodies. It is extremely important to create a so-called green control at all legislative levels. Unfortunately, the cause of environmental protection has been forced into the background as against various interests in the past four years, in spite of the fact that, earlier, the current parliamentary parties promised something else. It is perhaps sufficient to mention the fact that a new and modern environmental protection law has not been submitted to Parliament to this very day; the obsolete law legislated in 1976 is still valid in Hungary.

Bodnar: Would you give some details about your program?

Schmuck: We have a comprehensive and complex program, one that does not only aim at solving environmental problems in the narrow sense of the word, but it also covers all areas of economic and social life. For example, the fact that we are also dealing with social issues is automatically connected with the fact that the roots of environmental problems are to be found in the economy itself and in the people's lifestyle and customs. Our party is striving to discover and treat the causes, rather than carry out symptomatic treatment. The basic principle of our program is to recreate a harmony between man and nature. The present and future key issue is how we can coordinate the economic and ecological interests. An increasing number of people and politicians find this need, because the exploitation of natural resources is so widespread today that it could actually become a factor hindering economic development. The serious recession all over the world and the serious economic problems today can also be traced to this circle of problems.

Bodnar: Many people regard your ideas as a utopia...

Schmuck: People should read our program published in the Election Bulletin. Many people called us up recently and told us that the public indeed formed the opinion about the ZA that we were following a utopia but, after reading our program, they support us because, in their opinion, our ideas are realistic and offer a solution that would make survival possible, namely to slowly find the way out of the crisis, to build an environment-friendly economy and society. We think that the seriousness of this problem will force everyone to move in this direction. I am convinced that our program is realistic and even viable.

Bodnar: How do you explain the fact that, contrary to Western Europe, the greens failed to make themselves properly known in Hungary?

Schmuck: This is not quite true, because a lot of deputies got into Parliament via the Danube-movement. It is a fact, however, that, since the change in the regime, the various environmental protection movements have not been able to strengthen to the extent desired by this serious problem. This is also connected to the fact that, contrary to the promises, the civil organizations did not

get the support and infrastructural background needed for their operation. No matter how many volunteers there are in the environmental protection movements, they still need minimal conditions necessary for their activity, and they lack these conditions. For example, only a few Hungarian environmental protection movements have an office to work from. This is a serious problem.

Bodnar: Which parliamentary party is close to you?

Schmuck: Our relations with the parliamentary parties is proportional with their treatment of the environmental issues. The ZA is a party free of ideology. We have values close to the left, the liberals, and the conservatives. At

the same time, there are trends in all these three directions that we reject. We are moving in a fourth axis, and we do not belong to any main stream.

Bodnar: What election results do you count on?

Schmuck: I would like to mention the fact that most non-parliamentary parties have very little chance of reaching the 5-percent threshold because they lack financial resources. However, we will definitely be able to come up with a rational list. I would also like to mention the fact that Karoly Javor, a parliamentary deputy of the Hungarian Democratic Forum (MDF), will run in the elections as an independent representing the ZA. We know that our chances are minimal, but we hope we will obtain more than 1 percent of the votes. Our making it into parliament depends on the extent to which the citizens vote for a so-called green future.

ARGENTINA**Environmental Protection Legislation Discussed****Industrial Waste Loopholes**

94WN0199A Buenos Aires LA PRENSA in Spanish
15 Feb 94 p 7, Section 3

[Article by Eduardo Calvo Sans: "The Enemy Is Argentina"; first paragraph is LA PRENSA introduction]

[Excerpts] While all sorts of hazardous materials circulate throughout the world, here in Argentina we still do not know what to do with our own wastes or how to control them.

Argentina is supposedly safe from hazardous wastes coming from other countries. In principle, a controversial law (24.051) bans this, though some environmentalists say that its later enacting regulation (Decree 831/93) leaves open a window through which some wastes could be introduced, disguised as industrial components.

It is a fact that throughout the world such materials are "roaming around" in search of storage sites. It is the duty of the authorities to keep their eyes open and their pockets shut. [passage omitted]

For Argentina, the enemy is within.

Generators of hazardous wastes and unscrupulous waste disposal contractors cannot be controlled. The unevenness of legislation throughout Argentina, the inadequacy of the organizations that are supposed to conduct controls, and the lack of industrial facilities to process these materials place the population at serious risk.

Tragic isolated events may suddenly make the problem obvious. The widespread feeling among specialists is that Argentina is living on a time bomb, and there are no legal or political mechanisms to dismantle this bomb.

Legal, Constitutional Guarantees Sought

94WN0199B Buenos Aires LA PRENSA in Spanish
9 Feb 94 p 7, Section 3

[Article by Eduardo Calvo Sans: "Prioritizing Environmental Legislation"]

[Text] With the elections for convention delegates approaching, there is speculation in the environmental community about how the issue of the environment will be dealt with in the new Constitution. At least for now, apart from official statements, this concern is not getting any answers from politicians.

The law requiring a partial reform of the National Constitution (24.309), resulting from the Menem-Alfonsin accord, leaves the issue open, but no agreements have been reached about addressing it.

Given the present paralysis on the hazardous wastes law because of the refusal by some provinces to adhere to a

standardized legal system covering the entire nation, nobody in the political arena dares think that the "federal plan" may be incompatible with this new situation. The statement has been heard that "it is politically unworkable to demand that the provinces turn over control of the environment to the national government."

In recent statements, criminal law expert Miguel Angel Aguilera has emphasized the need to "prioritize the environmental system by granting it adequate protection in our Constitution" and by criminalizing actions detrimental to the environment. He described environmental crimes as "white collar" crimes.

The legal specialist said that "with the exception of some types of water pollution (which is, par excellence, the old environmental crime), in general Latin American criminal codes lack provisions designed to protect the environment."

Earlier Aguilera had said that "Argentine society, acting through its institutions and nonprofit foundations or organizations, has expressed its concern." He then urged members of Congress to respond to this concern by enacting legislation.

As the constitutional reform approaches, Aguilera cited the examples of Panama and Spain. Their constitutions speak of the "state's fundamental duty to ensure that the population lives in a healthy environment free of pollutants, where the air, water, and foods fulfill the requirements for the adequate pursuit of human life."

Aguilera's statements reflect a "principle-based" concern that is common in the environmental community. But some analysts want our new Constitution to contain more than just a formal statement.

Although later laws will actually enact regulations and implement the principles defined in the Constitution, the new "Magna Carta" should be explicit in one aspect: it should not contain any elements that might become obstacles to environmental protection.

As an example: the rigid federalism of our present Constitution has become an insurmountable obstacle, blocking adequate legislation on the management of "hazardous wastes," something which is absolutely essential from this time forward.

Hazardous Waste Seminar

94WN0199C Buenos Aires LA PRENSA in Spanish
9 Feb 94 p 7, Section 3

[Text] On 2, 3, and 4 March the Nature's Life Foundation will sponsor an Intensive Seminar on Hazardous Waste Legislation and Management, organized by the Business Research Bureau.

The scientific and technological program will be coordinated by Monneret de Villars, with technical coordination provided by Ricardo Rebagliati, both engineers. Guest lecturers will be Dr. Horacio Asprea, a hazardous

wastes expert who is Argentina's representative to the Basel Convention. Also lecturing will be Dr. Jorge Franza, attorney, professor at UBA [Buenos Aires University], who specializes in environmental and natural resources law.

The 24-hour course will be divided into three eight-hour units:

- Unit 1: Environmental legislation in Argentina.
- Unit 2: Hazardous waste management; elimination and final disposal operations.
- Unit 3: Recycling of hazardous wastes.

Participants may register up to 24 February at the Business Research Bureau, located at Parana 768, 8th floor (1017), in the federal capital. Telephone: 811-6873.

The course is designed to convey a full understanding of Law 24.051, which works to the advantage of both business and the environment.

BOLIVIA

Commentary Examines 'Lessons' Learned by 'Brief' Gore Visit

PY2203033994 *La Paz Television Nacional Network in Spanish 0100 GMT 22 Mar 94*

[Commentary by announcer Carlos Mesa]

[Text] The brief visit [by U.S. Vice President Al Gore]—like all visits by U.S. personalities, who never have enough time for a small country like ours, or even for countries like Argentina and Brazil, for which there are but a couple of hours in the middle of a huge show—has left us some lessons.

The U.S. Vice President—in this regard we agree with some of the viewpoints that were raised by the press today—probably gave us two messages. On the one hand, the U.S. position on the antinarcotics fight has not budged an inch. There have been neither essential nor substantive changes between the Bush and Clinton administrations.

The U.S. ambassador soon realized that the coca leaf garland [given to Gore upon getting off the plane] was a hot issue, and asked the vice president to get rid of it. Gore wore it for barely a few seconds. This clearly shows the U.S. position. Drug trafficking, coca, and production remain vital and essential and, unfortunately, decisive factors in bilateral relations.

Yet a second, positive message, in which we may find the most important point of this visit, is that sustainable development, the environment, and the preservation of ecological balance in a region that is so important as the Amazonas, is of the utmost importance for the United States, and especially for the U.S. vice president.

In Santa Cruz, Gore ratified his support for the construction of a gas pipeline to Sao Paulo, Brazil, for conveying

clean energy for that very important Latin American city. He also supported a set of projects that could become an option.

I do not know whether the development of ecology, or rather I should say the preservation of the environment, will become as important as the coca issue. I don't believe so. Yet it is a point on the agenda that can produce some changes, or give a different touch to this dreadful and conditioned relation that coca has produced between Bolivia and the United States.

BRAZIL

Environmental Funding Problems Viewed

PY2203221094 *Sao Paulo GAZETA MERCANTIL in Portuguese 21 Mar 94 p 14*

[Article by Francisca Stella Fraga from Sao Paulo]

[Text] As of June 1992, when the UN Conference on Environment and Development—Rio '92—approved Agenda 21 that establishes that the rich countries must supply new resources in favorable conditions to developing countries so they can protect the environment, the Brazilian Government's strategy for negotiating external financing in this sector became based on that principle. Meanwhile, organizations such as the World Bank continue to insist on traditional financing criteria for releasing resources for environmental projects.

This criteria has been one of the most serious obstacles to implementing projects that follow the Rio '92 objectives to open the way for sustainable development, according to Pedro Mota Coelho, chief of Itamaraty's Environment Division. The demand that Brazil put up matching funds for the financing of environmental projects that is systematically imposed by the World Bank is an evident example that the bank is using traditional credit mechanisms. According to Mota Coelho, the demand goes against the guidelines contained in Agenda 21, especially in the cases in which the World Bank acts as an intermediary in obtaining resources from the rich countries, such as the case of resources for the Ozone Fund, which was created to finance projects for preventing the destruction of the earth's ozone layer.

"The release of resources must have a better flow," Mota Coelho said. "It is clear that we must do our lessons at home, and that is what we are doing."

And it is this effort that is being incorporated into the task of a group being coordinated by the Planning Secretariat of the presidency, in other words, Seplan [Secretariat of Planning and Coordination of the Presidency of the Republic]—which involves the Environment, Finance, and Foreign Ministries, among others—was created in order to specifically simplify the forms and mechanisms for the reception of external resources.

"At this stage, even the reception of donations is very difficult," Mota Coelho said.

Denmark

This is why Environment Minister Rubens Ricupero frequently has repeated during financing negotiations that Brazil is not Denmark. If it was, then its institutions would function magnificently and the public organizations involved in the environmental field would be perfectly structured to comply with their functions. But even if this was true, financing would not be necessary either. Among its numerous shortcomings, Brazil needs resources in order to improve its organizations.

Guideline Changes

Environment Ministry executive secretary Sergio Silva do Amaral stressed that Brazil's environmental sector has had considerable changes in guidelines during the past few years and this has caused a major lack of stability. The Ibama [Brazilian Institute for the Environment and Renewable Natural Resources], which was created in 1989, has had nine presidents in a four-year period; and the Environment Secretariat and the Environment Ministry also have changed chiefs five times since 1992. In addition, Ibama does not have the resources to handle complex international negotiations. Four hundred technicians were trained recently to handle this, he stated.

Amaral also stated that the federal government's budget restrictions do not help in releasing matching funds for financing. This even affected the National Environment Program, the PNMA, which was instituted precisely in order to improve the public administration's efficiency in the environmental field. The PNMA is now 36 months old but has only received regular budgetary resources for the past 17 months. According to the PNMA, the government is restructuring in order to improve its evaluation of the specific situation of each project in order to prevent this from continuing.

Simplifying Problems

According to Amaral, another effort that has been made is that of seeking an understanding with the government's economic sector in order to simplify the procedures for the release of external resources. He states that there has been progress regarding the mechanisms of the National Environment Fund (FNMA), which is financed by the Inter-American Development Bank (IDB). The economic sector's green light for the use of resources was so delayed that at times it passed from one fiscal year to the next year and this demanded new agreements, within an infinite process of bureaucratic actions, for the use of the resources.

Amaral now says it is possible to use the balance from one fiscal year to the next year without signing new agreements.

He also stresses that the World Bank itself is contributing to the delay in approving projects. It has the habit of delaying in order to evaluate and name consultants. In addition, the projects are revised very frequently. This why the Brazilian Government has suggested that the World Bank also should adopt more rapid measures where it is concerned.

The external resources the Brazilian Government has negotiated for the environmental field are divided into four areas:

Amazon Pilot Project. To be financed by the seven richest nations in the World—the Group of 7—for the preservation of Brazil's tropical forests. The initial provision made in 1990, when the project was approved by the member countries in Houston, amounted to \$1.6 billion. During the 1991 Geneva meeting it was agreed that the first part of the resources—\$250 million—would be released and 12 projects were approved. Of the 12 projects, seven are very well advanced in their drafting. But the resources have not been released yet.

Projects for biodiversity preservation that are to be financed with a fund of \$18 million from the resources of the Global Environment Facility [title published in English] (GEF), which was created in 1991 and is supported by the World Bank, in addition to the \$18 million Brazil will have to put up in matching funds. The GEF also has promised to release \$30 million for other environmental projects and the Brazilian Government promised \$12 million in matching funds.

The restructuring of Brazilian organizations involved in the environmental sector. The PNMA has contracted financing of \$117 million with the World Bank in order to strengthen the country's environmental institutions and organizations, to implement projects to protect natural resources, and to support projects for the decentralization of environmental activities.

The FNMA was created with capital of \$22 million from the IDB and \$8 million in government matching funds for the financing of low-cost projects—up to \$200,000—for the preservation of environmental areas, research, biodiversity, and activities pertaining to environmental preservation. This is a little-known program that can be used by municipalities and nongovernmental organizations. Some of the funds already are being used.

CHILE

New Basic Environment Law Outlined

PY2503220394 Santiago EL MERCURIO in Spanish
10 Mar 94 p 7

[Article from the "Environment and Development" column by Lilia Duery A.]

[Text] Simple, comprehensive, integrating, realistic, and feasible are some of the words that describe the Basic Environment Law (No. 19300). This law that took 14

months to be approved by Congress was implemented on 9 March after its publication in the official gazette.

In the opinion of the law's authors, the instruments that outline the future of Chile's environmental actions are inspired in an integrating approach capable of granting, without going into details, key and generic guidelines for all national environmental problems. In other words, the easiest path was chosen, taking into account that with rules at hand it is easier to solve problems and progressively tackle each of the situations the country must face in this field. This will be done through the respective regulations that will be implemented over time.

The basic law is divided into 94 articles in addition to three transitory articles. It consists, basically, of a series of definitions and principles regarding its importance, in administration and institutional instruments that will allow its implementation, and in a system to define responsibility for damaging the environment.

This new law includes (discarding the idea of codifying in a single text the various important regulations in force regarding the environment in Chile) two main instruments that will make its implementation feasible. National Environment Commission (Conama) executive secretary Rafael Asenjo referred to these instruments.

Key Instruments

The main instrument is the System for the Assessment of the Impact on the Environment [Sistema de Evaluación de Impacto Ambiental—SEIA] that, according to Asenjo, in addition to its preventive nature regarding Chilean production activities, deals with the international competition demanded in sustainable development. It includes procedures for the establishment of standards for emissions, quality, and environmental terms, giving the productive sector (either public or private) full autonomy to choose its own technology to attain these goals.

It also includes prevention or decontamination plans, whatever is needed, that can resort to market instruments such as a "permit for negotiable emissions." Here again the law grants business people the freedom to reach agreements among themselves for the fulfillment of environment quality standards for a specific area. Rafael Asenjo said: "Once rules for the use of this mechanism have been defined, we believe it will greatly contribute to a progressive, gradual, and sustained reduction of pollution levels."

This chapter also includes plans for the handling of natural resources, the improvement of the National Wild Areas System protected by the state, and the citizenry's participation, especially regarding their right to be kept informed on environment-related studies.

New Public Service

The second instrument of the law is of an institutional nature. In fact, Conama ceases to be an advisory commission to become a public service, with legal status and its own patrimony. Its main role will be to integrate and coordinate the environmental activities of all sectors of the public administration that have any say in the matter. The executive council formed by 10 ministers and the Conama executive director also is created.

This organization, in turn, will operate in a decentralized manner through respective regional environment commissions (Coremas) and will act as a horizontal structure at the government level that will be supervised by the president of the Republic through the ministry secretary general of the presidency, a privileged interlocutor between the government and the community. Moreover, Conama will be in charge of revising and periodically (every five years) updating the regulations issued regarding various subjects. In this case, surveillance will be absolutely by sectors, except in the case of complaints, in which case this service is in charge of making sure the law is respected. In this regard, it should be pointed out that people may approach the city halls authorized to hear the complaint and channel it to the respective Corema or the main office if necessary, under threat of a court ruling if it fails to do so.

Regional Model

In one way or another, this law contains and expresses the principles "whoever contaminates pays" (in other words, whoever contaminates must include in his costs what it will cost to decontaminate), as well as the "gradualism" and "realism" principles.

Rafael Asenjo said: "This is the result of having explicitly tackled the subject from an integrative and comprehensive viewpoint for the first time in Chilean law." Therefore, he added, when we start to apply the law "we will take a necessary quantitative step forward in our country's environmental activities."

In this sense Asenjo believes there is a more optimistic future for Chile, noting that the laws dictated during the past years by the Latin American countries have not followed this model. He commented that despite the huge economic and human resources they have earmarked, their environmental problems have not been reduced. "We believe the reason for this failure in the region has been the attempt to solve everything at once with the same law and having created a fully sectorial institutional scheme that has lead nowhere and caused the various ministries to compete with each other," Asenjo commented.

Specific regulations are necessary now to start applying the environment law.

ECUADOR

Pongo Forests Cut for Firewood, Charcoal

94WN0204A Quito HOY in Spanish 24 Jan 94 p 8A

[Text] *The recent discovery of 14 furnaces for making charcoal in the Pongo Natural Forest, in Azuayo de Giron Canton, alerted the public to a method of destroying natural forests that is all the more reprehensible because it is unnecessary. However, it has proven impossible to curb.*

Cuenca—Pongo is an expanse of over 300 hectares of woods consisting of large-sized native species that, according to British biologists, must have taken at least 600 years to grow. During the past three years, 50 hectares of this virgin vegetation have been converted into firewood or charcoal.

The destruction of part of the forest was confirmed by the undersecretary of agriculture in the South, Carlos Moscoso. On two visits to the site, access to which is difficult because it lies amid dense vegetation, he discovered 14 furnaces and eight persons working on the processing of charcoal.

When the Ecuadoran Institute of Forests, Natural Areas, and Wildlife (INEFAN) was alerted, four men were given a fine of two minimum wages each. It was also decided to seize the motorized saw and the material already processed.

Nevertheless, the INEFAN, which is the only judge for this type of administrative process, cannot auction the items that are seized, because it lacks the means for removing them from the site.

The landowner, fined three minimum wages on a previous occasion for felling trees without a permit, has not yet been penalized in this case.

"Now They Realize"

Carlos Moscoso claims that action has been taken, in cooperation with the INEFAN, to make confiscations at the market and during the clandestine transport of plant materials.

He also notes that identification cards will be given to interested private individuals, giving them the authority to act as forest wardens.

A visit to the charcoal and firewood market, now moved from the famous Otorongo to the most secluded part of Arenal, the city's principal market, proves the contrary. A vendor makes the rather explicit statement: "Yes, they bother us once in awhile, but lately they have realized that people have to make a living from something."

Most of the charcoal comes from the coast, and this informant confirms the statement made by the MAG [Ministry of Agriculture and Livestock] and the INEFAN to the same effect. However, the INEFAN director, Pablo Vintimilla, wonders: "Now, where will the coast's charcoal come from?" Statistics prepared by

the institute in December also indicate that much of the firewood sold at Arenal comes "from the hills": in other words, from natural forests. Considering the fact that felling trees for lumber makes use of a minimum amount of the material, the INEFAN tolerates the processing of charcoal from cultivated timber and from material originating in the routine chopping of woods. This is more than sufficient for making charcoal that, apparently, continues to be consumed. The INEFAN's legal adviser, Franklin Bucheli, places great hope in the expedient that the institute has for collecting taxes on lumber and for controlling transportation permits.

He trusts more in educating people than in coercion, but admits that, in the meantime, something should be devised by the experts and other technicians for controlling this situation. He says that it seems manageable, compared with the problem caused by the felling of woods for the powerful lumber industry.

Gulf of Guayaquil Pollution; Galapagos Viewed94WN0204B Quito EL COMERCIO in Spanish
30 Jan 94 p A-7

[Text] *According to Fernando Gonzalez, the undersecretary of fisheries, the productive sectors, especially those of the banana and fishing industries, should cooperate to repair the damage to the environment and the pollution of the Gulf of Guayaquil.*

Guayaquil Staff—Fernando Gonzalez, undersecretary of fisheries, emphasized that the productive sectors devoted to banana growing and catching marine resources are responsible for polluting the Gulf of Guayaquil and damaging the country's ecosystem.

The fisheries undersecretary remarked: "We have been irresponsible in using these resources," and called upon those involved in these activities to participate intensively in ecosystem rehabilitation programs.

He added that Taura syndrome, a disease that seriously harms shrimp production, and the pollution of the gulf are due largely to the use of chemical products.

The shrimp fishermen have held banana producers responsible for Taura syndrome and for the pollution of the Gulf of Guayaquil, owing to the indiscriminate, excessive use of pesticides in the battle against the black sigatoka fungus.

In Fernando Gonzalez's opinion, all this has created a conflict that should be resolved immediately, through the use of suitable methods and consensus.

When the national government learned that two major sectors of the Ecuadoran economy were at stake, it ordered the ministers of agriculture and industries to work jointly to reconcile these industries. The aim is to prevent either of them from being harmed, and also from damaging the ecosystem.

Gonzalez noted that the National Banana Program has devised regulations for the use of pesticides, adopting proposals from the National Chamber of Aquaculture to avoid damage to the ecosystem.

Fernando Gonzalez indicated that the problem is global. The estuaries associated with the Guayas Basin have been used by many industries for a long time, and this has caused congestion in the ecosystem.

Since August 1992, the National Institute of Fisheries has been monitoring (investigating) the Gulf of Guayaquil and Guayas Basin, by establishing 12 stations around various shrimp production companies. He said that, within the next few days, the institute will submit the reports received on the investigations.

Undersecretary Gonzalez also cited the series of prohibitions and bans issued in the insular Galapagos Province.

He noted that President Sixto Duran Ballen had sent a commission comprised of the national defense, agriculture, and tourism ministers, to determine the real problems besetting one of that province's leading economic activities, namely, fishing.

He gave a reminder that there have been prohibitions in Galapagos that have not adhered to legal specifications called for in the Ecuadoran juridical system, nor to technical specifications with which they should have been prepared.

The prohibitions were issued because it seemed fitting to certain authorities or parties concerned, but without any technical criterion, much less a scientific criterion.

He added that the Ministerial Commission will determine the means for resolving this situation, making it possible to prevent the depredation of marine resources.

Gonzalez commented: "In principle, any resource is susceptible to exploitation so long as it is done with a view toward sustained use. However, continental business firms must be prevented from going to Galapagos and hurting the interests of the Galapagos nonindustrial fleet, consisting of small insular fishermen."

"The continental companies went to the archipelago, plundered the crawfish and sea cucumber, and were replaced later by others."

He added: "To avoid this series of violations against the marine resources, it is planned to create a Sub-Directorate of Fisheries, with jurisdiction in Galapagos. The 56 forest wardens on the islands will be given the responsibility for being converted into 56 fishing inspectors."

Shrimpers Deny Extent of Mangrove Destruction

94WN0204C Quito EL COMERCIO in Spanish
2 Feb 94 p D-7

[Text] *There are approximately 133,000 hectares of shrimp nets in the country. It would hardly be possible for 150,000 hectares of mangrove swamps to be devastated, leaving only 40,000 in Ancon de Sardinas: National Chamber of Aquaculture.*

Guayaquil Staff: The National Chamber of Aquaculture has expressed concern and constant support for the creation of a system for surveillance and monitoring of the mangrove swamps and the ecosystem. This also entails a revision of the penalties in effect under the present regulations.

The institution's executive director, Harold Muller, gave explanatory reports on the statistics for mangrove swamp depredation ascribed to shrimp production.

According to statistical data from the Remote Sensor Integrated Surveys Center (Clirsen), the distribution of mangrove swamps in Esmeraldas covers 32,032 hectares.

The Coastal Resources Management Program (PMRC), in its series of management plans for the special management zones (ZEM) of Atacames-Sua-Muisne, indicates that, between 1969 and 1987, the reduction in the mangrove swamp area surface totaled approximately 1,000 hectares.

This decline compounds that caused by shrimp nets, removal of mangrove piles, and charcoal production, which amounts to 1.2 million pounds per year in the Muisne area alone.

Muller proved with documentary evidence that the mangrove swamp reserve is nearly intact. He declared that there is an error in the claim that 150,000 hectares of mangroves out of a total of 300,000 have been felled.

There has also been a claim that, in 1986, the Esmeraldas mangrove swamp was declared a protective forest and that, despite this, over 150,000 hectares have been felled since that date, leaving at present only 40,000 in the Ancon de Sardinas estuary.

Muller gave a reminder that the shrimp industry in the country as a whole occupies approximately 133,000 hectares. He added that 150,000 could hardly be devastated, leaving only 40,000 hectares on the Ancon de Sardinas estuary: something that is not true.

He stressed that it was at the sector's initiative that the national government was requested to cease granting new concessions for the construction of shrimp ponds, and noted that these authorizations have been suspended.

On several occasions that institution has asked the government to exercise strict control over the indiscriminate felling of mangroves on the national territory, so as to prevent unscrupulous persons from continuing their

deforestation work. This is especially necessary since the sector has been fully aware that the mangrove swamp constitutes a fundamental element in the ecosystem, primarily in the development of shrimp itself.

"Therefore, we are the first to take precautions and oversee the good condition of our resources."

Although the shrimp sector, and particularly the National Chamber of Aquaculture, have been the first to report, and to give constant cooperation to the authorities, it is regrettable that our laws do not call for example-setting penalties.

Because of this situation, the efforts expended by shrimpers, fishery authorities, and the navy are being constantly thwarted by the land traffickers.

Minimal, and even ridiculous penalties are imposed on those engaged in the repugnant task of destroying mangrove swamps.

The Aquaculture Chamber is also concerned about proposing a revision of the penalties in effect in the regulations.

Muller emphasized that the shrimp industry accounts for over 31 percent of private exports and, more than an environmental impact, is having a significant economic and social effect. It generates foreign exchange in an amount equivalent to \$525 million.

Moreover, it employs over 200,000 full-time workers directly, and over 90,000 persons indirectly. This means that 7.2 percent of the country's economically active population makes its living largely from the shrimp industry.

During recent times especially, many private and state organizations have come out in defense of the Ecuadorian mangrove swamp.

The shrimp sector, in particular, is accused of being the main cause of the deterioration of vast riparian areas of the Ecuadorian coast.

PARAGUAY

Union Reports Illegal Entry of Radioactive Material

PY2203172394 *Asuncion ULTIMA HORA in Spanish*
20 Mar 94 pp 14-15

[Excerpt] Leaders of the Employees and Workers Union of the National Directorate for Civilian Aviation (SEODINAC) have expressed concern because no attention has yet been given to several reports of irregularities submitted to the Administrative Council of the DINAC [National Directorate for Civilian Aviation].

The union said: "We are facing a worrisome situation over the entry of 104 kg of radioactive material under the UN Development Program through the Silvio Pettrossi International Airport."

The union added that the situation is worse because the highly dangerous cargo left the airport jurisdiction under a regulation called "cargo to be regularized" which can be considered legalized smuggling.

The union commented that approximately 18 months ago two small cans of radioactive material were found at the airport. The case was made public but nobody knew anything about how they appeared.

The union stated: "Documents now in our possession open the way to a thorough investigation that could expose a new face in the trafficking of prohibited merchandise through our airport."

The union believes several people are responsible for the entry of nuclear material into the country: One is Col. Ramon Dardo Guerra, head of the DINAC: Another is Col. Americo Osorio, airport director, who authorized the delivery without even the payment of the airport duties, and Victor Arevalo as the professional who mediated in this shipment. The air cargo ramp chief is also believed to be involved. [passage omitted]

BANGLADESH

Commentary Assails Export of Hazardous Waste to Third World

BK2603131194 Dhaka Radio Bangladesh Network
in English 1530 GMT 25 Mar 94

[Station commentary]

[Text] The dumping and trading of hazardous chemical waste have become a major environmental concern globally. The issue was raised at a recent international environment conference in Geneva. At the meeting, the leader of the Bangladeshi delegation and State Minister for Environment Gayeshwar Roy said the dumping of toxic and hazardous waste must stop, as much as a halt should be called to end the export of such commodities by the West to the Third World. The Bangladeshi delegation chief said definite international restrictions must be applied to the movement of chemical waste.

The large and massive industrial complexes of the West generate most of the hazardous waste globally and a good part of it is dumped in the Third World, either through arrangements or surreptitiously in the high seas surrounding the developing countries. Once, some Third World countries agreed to take the chemical waste of the West in return for financial assistance. There were reasons for that. Environment awareness was poor in those days and most developing countries were cash-strapped and looked for an avenue for resources wherever they could be obtained. But now, with the increasing public awareness of the environment and of the need to protect one's ecology, Third World governments are not willing to allow their backyards to be used as dumping grounds for the waste of the industrial countries. Even allurements offered through aid are not enough to change their stands on accepting anybody's waste.

So a different strategy is being used by some Western chemical complexes in disposing of their hazardous waste by taking those by the shipload and throwing them in the sea near the coast of the Third World countries, because these nations do not have the means to police their coasts adequately against such threats. Bangladesh has been a victim of such illegal dumping by these waste-carrying ships. The Bangladeshi Navy and the Coast Guard have detected such waste dumping and have taken punitive and legal action against the unlawful acts.

Another way of transferring waste to the Third World is by exporting chemical fertilizers mixed with hazardous waste. These products are made in the industrial countries and sold to the developing countries. Such illegal trade have been detected in many Third World countries, including Bangladesh. Very recently, a consignment of imported fertilizer in Bangladesh was found to contain chemical waste. After contamination was discovered, the government immediately swung into action and took legal measures against the exporting American company and its local agent.

Bangladesh has asked the international community to draw out definite measures in the face of trading of such hazardous waste. A constant vigil should be kept on the movement of such chemical waste throughout the world. There should be an international authority entrusted with this responsibility.

More dangerous is the revelation that nuclear waste are being dumped in oceans by countries which possess nuclear facilities. This dumping is contaminating the oceans and is endangering the environment. The radioactive poisoning is spreading around the world. There should be an international regime to protect the oceans—the common heritage of mankind—from nuclear pollution. Perhaps the Geneva international environment conference will pave the way for establishing such a regime. Bangladesh will always support any move that is aimed at safeguarding the planet that belongs to all nations.

RUSSIA

Environment Protection Bodies Hold Conference in Moscow

*MK2203112094 Moscow SEGODNYA in Russian
22 Mar 94 p 1*

[Vlad Ignatov report under the "Ecology" rubric: "Russia Produces 10 Percent of World Pollutants"]

[Text] The work of an All-Russia Conference of the Russian Federation Ministry of Environmental Protection and Natural Resources with the participation of deputy heads of administrations of federation components and heads of territorial nature protection bodies is winding up today at Parliament Center. For two days, some 400 participants have been taking stock of the work done in 1993 and discussing their goals for the current year.

The Ministry of Environmental Protection and Natural Resources faces a great deal of work. According to its head, Viktor Danilov-Danilyan, in many respects—the discharge into the atmosphere of ozone-destroying substances and sulfur dioxide, the generation of radioactive waste—Russia, on whose territory live only 2.5 percent of the earth's population, accounts today for a tenth of the world's amount of pollutants.

It was pointed out at the conference that the uncertainty of the nature watchdogs' status sometimes led to confrontations with representatives of the other agencies in resolving ecological issues. This problem has been partially eliminated by the Russian Federation Government decree "On Specially Authorized State Organs in the Area of Environmental Protection." Currently a new decree is in the works whose draft gives Ministry of Environmental Protection and Natural Resources staffers broader rights, up to the use of punitive sanctions. There is still no unanimity, however, on the role of territorial nature protection structures. According to a departmental poll conducted by the Ministry of Environmental Protection and Natural Resources, nearly 30 percent of territorial nature protection bodies see their functions in being only coordinators, 24 percent see themselves as coordinators and inspectors, while the majority—47 percent—are prepared to become the only special nature-protection management bodies.

Yablokov on Status of Legislation on Environmental Health Damage

*94WN0187A Moscow ROSSIYSKIYE VESTI
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[Article by Aleksey Yablokov, chairman of the Russian Federation Security Council's Interdepartmental Commission on Ecological Safety: "Aleksey Yablokov: 'Each Person Must Decide How To Save Himself and His Children'"]

[Text] According to the findings of the World Health Organization (WHO), the state of the environment accounts for an average of 30 percent of the health of each human being. Obviously, the percentage should be lower in ecologically sound regions and much higher in zones of ecological problems and crises (and at least 15 percent of Russia's territory falls into these categories). It is also obvious that someone must take responsibility for health impairments beyond the citizen's control.

Finally, it is also obvious that the protracted absence of state concern for this connection between the state of public health and the state of the environment has led to one of the most substantial threats to national security because the average lifespan—one of the general statistical indicators of national health—has been plunging disastrously since 1986.

When we say that the state must defend the rights and freedoms of the individual and that individual rights are above all other rights and freedoms, we are also referring to the now constitutionally secured right to compensation for health impairments resulting from the deterioration of environmental quality.

At the beginning of 1992, just after the Russian Federation laws "On Sanitary-Epidemiological Welfare" and "On Environmental Protection" were passed, it became obvious that the exercise of the right of citizens, declared in these laws, to compensation for health impairments caused by environmental factors would require additional legal and analytical work. We need standards and rules stipulating the actions that victims can take to protect themselves from the unfair judicial actions of polluting enterprises. What these victims need even more, however, is reliable proof that a specific impairment is caused directly by the pollution of the environment from a specific source. Without this information, they cannot expect a court to hear the case and rule in favor of the injured party. As a result of the intense work of a team of specialists, mainly connected with Gossanepidnadzor [State Committee for Sanitary-Epidemiological Oversight] and begun in spring 1992 under the auspices of the Russian Presidential Council on Ecological Policy, a set of standards and rules was drafted. The draft has already been "under discussion" in the Ministry of Justice and Ministry of Economics for more than a year, and the end of this process is not in sight. I can appreciate the difficulties this kind of deliberation entails: This document would grant citizens rights comparable to the right to protect personal inviolability and the right to own property.

In view of these difficulties, a decision was made to enlist the aid of epidemiologists in the codification of the effects of specific environmental pollutants on various health indicators—in a format suitable for a judicial hearing.

It was not possible to achieve all of these goals: The information that is being published today sometimes sounds more like a scientific treatise than the anticipated

set of guidelines, but even the results to date are important enough to publish. The effects of other ecological factors of human origin on human health—chemicals, as well as noise, radiation, and others—will also be analyzed in the future. We hope that this research will eventually be recognized as the official set of standards and guidelines.

Armed with an awareness of the general state of affairs and the effects of pollution on his own health and the health of his children and grandchildren, each individual will choose his own method of avoiding this potential danger—by leaving the zone affected by the pollutant or by uniting with other affected citizens and forcing the polluter (through various channels, including judicial proceedings) to stop the pollution.

Therefore, the report that is being published today was written, on the one hand, for the public—to inform each citizen and offer more effective protection of the right of each citizen to a healthy environment—and, on the other, for the administrators and owners of sources (irrespective of forms of ownership) of dangerous chemical pollution, so that they will stop the hazardous emissions and dumping without waiting for legal judgments against them.

We wish to thank the newspaper and its special "Prescription" supplement for this publication—it is addressed to literally each person in Russia.

An applied science conference will be held soon on "Problems of Public Rehabilitation in Zones of Ecological Damage." The conference will be held by an association of trade unions in regions with unhealthy ecological conditions and by the International Fund for Socioecological Aid. Through the efforts of these organizations, the participants in the conference should receive our report in the form of a brochure to be used as a guide for action. These may just be the first tentative steps, but they are signs of progress....

Draft Document on Effects of Pollution on Health of Russian Population

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[Abridged report of Interdepartmental Commission of RF Security Council on Ecological Safety: "Each Person Must Decide How To Save Himself and His Children"]

[Text] Around 28.2 million tonnes of pollutants from 18,000 stationary sources and another 22 million tonnes from mobile sources were discharged into the air of Russian cities and smaller communities in 1992. This is equivalent to 300 kilograms of pollutants for each inhabitant of Russia during the year. The leaders in industrial discharges of solid substances are Magnitogorsk, Nizhniy Tagil, and Chelyabinsk, as well as the cities of Asbest, Troitsk, and Suvorov; the highest levels of sulfur dioxide emissions have been recorded in Norilsk, Monchegorsk, Nikel, Orsk, and Omsk; the highest levels

of nitrogen dioxide emissions are in Moscow, St. Petersburg, Surgut, Asbest, and Omsk; the highest levels of carbon monoxide emissions are in Novokuznetsk, Magnitogorsk, Lipetsk, Cherepovets, and Nizhniy Tagil. Vehicle emissions are at the highest levels in Moscow, St. Petersburg, Krasnodar, Omsk, Ufa, Volgograd, Nizhniy Novgorod, Samara, and Voronezh. Calculation methods based on the relationship between the total amount of substance discharged and its allowable concentration are used in the hygienic assessment of discharges of toxic substances into the air. This coefficient, which is known as the "relative risk coefficient," served as the basis for the categorization of substances in order of risk and the cities where these substances are present in the atmosphere.

The main substances recorded were benzpyrene, sulfur dioxide, and nitrogen oxides, which are connected with the substantial emissions of power engineering facilities, and lead.

It must be borne in mind that official emission statistics do not reflect the whole spectrum of pollutants because some enterprises do not submit this information in the necessary detail. Furthermore, many enterprises discharging substances containing toxic metals that are dangerous to human health are not included in these indicators.

Official air pollution statistics also do not include emissions of toxic metals resulting from the consumption of solid and liquid fuel (coal and fuel oil). Calculations based on information about the elements of fuel indicate that the volatile microelements contained in coal—arsenic, mercury, bromine, and antimony—enter the atmosphere along with thousands of tonnes of vanadium, manganese, fluorine, and zinc compounds. The estimated 80 million tonnes of fuel oil used each year in power engineering pollute the air with thousands of tonnes of vanadium, nickel, boron, and bromine and dozens of tonnes of many other elements. Motor transport is a major source of lead particles in the air of virtually all Russian cities (except Moscow). These emissions can amount to 2,000 tonnes a year. An assessment of the relative danger of discharged metals indicates that lead is the main hazard—furthermore, it is the most pervasive element—followed by compounds of vanadium, nickel, manganese, and fluorine.

The relative danger of pollutants in the air of different cities was judged by six types of substances (solids, sulfur dioxide, nitrogen dioxide, carbon monoxide, hydrocarbons, and volatile organic compounds) listed in official reports.

The leaders in terms of the relative danger of emissions per unit of municipal area are Norilsk, Nikel, Novotroitsk, Angarsk, Monchegorsk, Novokuybyshevsk, Magnitogorsk, Cherepovets, Orsk, Yuzhno-Sakhalinsk, Novokuznetsk, Nizhniy Tagil, Zima, Zapolyarnyy, Sterlitamak, Lipetsk, and Salavat (Table 1).

Relative Risk Coefficient of Pollution in Some Cities	
City	Coefficient
Moscow	0.70
Yekaterinburg	0.74
Kaliningrad	1.21
Berezniki	1.59
Prokopyevsk	1.64
Samara	1.70
Ufa	1.78
Arkhangelsk	1.98
Komsomolsk-on-Amur	2.21
Volzhskiy	2.27
Perm	2.90
Krasnoyarsk	3.18
Khabarovsk	3.18
Chelyabinsk	3.45
Volgograd	3.51
Dzerzhinsk	3.65
Kemerovo	3.95
Tolyatti	3.99
Kamensk-Uralskiy	4.04
Shelekhov	4.19
Groznyy	4.26
Barnaul	4.36
Omsk	4.49
Salavat	5.67
Lipetsk	5.99
Sterlitamak	6.19
Zima	7.23
Zapolyarnyy	8.55
Nizhniy Tagil	8.98
Novokuznetsk	9.57
Yuzhno-Sakhalinsk	10.14

Orsk	10.52
Cherepovets	12.28
Magnitogorsk	12.30
Novokuybyshevsk	13.88
Monchegorsk	14.17
Angarsk	14.44
Novotroitsk	15.35
Nikel	22.83
Norilsk	85.85

Many cities where the air is polluted by substantial quantities of organic and inorganic substances—small and medium-sized metallurgical cities in the Urals and the chemical production areas in Stavropol Kray and in Kirov and other oblasts—are not on the list.

A detailed description of the composition of emissions, with a view to the makeup of organic substances and the presence of metals, could change the ranking of cities considerably. The problem of dioxins entering the air and the environment also requires immediate action. Existing estimates and evaluations of technological processes suggest that the existence of dioxin could present problems in around 20 cities in Russia.

The large quantities of substances entering the air of cities are resulting in higher concentrations of pollutants in the air. According to the 1992 state report on the environment of the Russian Federation, levels of air pollution exceeding 10 times the maximum allowable concentration (MAC) were recorded in many of Russia's cities and industrial centers. The most highly polluted cities with metallurgical industry include Lipetsk, Magnitogorsk, Kamensk-Uralskiy, Krasnoyarsk, Nizhniy Tagil, Novokuznetsk, Cherepovets, and Bratsk; the most highly polluted cities with chemical industry include Berezniki, Omsk, Perm, Tolyatti, Ussolye-Sibirskoye, and many others. The combined findings of air pollution studies by Roskomgidromet [Russian Hydrometeorology Committee] indicate the presence of a variety of pollutants in the air of many cities (Table 2).

Cities with the Highest Concentrations of a Group of Specific Pollutants

City	Substances and maximum concentrations
Perm	ammonia (74), hydrogen chloride (12), ethylbenzene (59), toluene (64), benzene (13), xylene (26), styrene (58), sulfuric acid (22)
Omsk	ammonia (30), xylene (4-6), ammonia (24)
Berezniki	hydrogen chloride (15), sulfuric acid (17), xylene (3)
Dzerzhinsk	hydrogen chloride (20), ethylbenzene (30)
Tolyatti	ammonia (30), toluene (14), benzene (9), styrene (20), xylene (3)
Kemerovo	ammonia (27), formaldehyde (11)
Nizhniy Tagil	phenol (5)
Lipetsk	formaldehyde (10), ammonia (10)
Volzhskiy	hydrogen sulfide (47), formaldehyde (2)

The group of identified substances in the air depends largely on the analytical capabilities of local laboratories, and this is the reason for the high number of identified ingredients in Perm, for example, with its well-equipped laboratory. The results of air quality surveys at Roskomgidromet stations that are published in almanacs provide no opportunities for assessing the spatial features of pollutant distribution. Air pollution levels near enterprises are much higher, however, than the city averages. In the air near the Permneftorgsintez enterprise in Perm, for example, the concentration of phenol can be as high as 22 times the MAC, the concentration of sulfur dioxide is 3.8 times the MAC, and the concentration of nitrogen dioxide is 6.6 times the MAC. The concentrations of formaldehyde, acetaldehyde, acrylaldehyde, acetone, ethanol, and butanol in the air of residential neighborhoods near the Khimvolokno and Azot enterprises in Kemerovo are 250 times the MAC.

Higher concentrations of pollutants in the air are carried for long distances encompassing sizable developed territories. In Berezniki, for example, a city surrounded by potassium production units, the concentration of many pollutants exceeds the maximum allowable concentration even at a distance of 5 kilometers from the plant.

An analysis of some of the results of air pollution surveys conducted by the public health service, scientific research institutes, and departmental laboratories revealed even more problems with air quality than those listed in the reports of Roskomgidromet.

Pediatrics and Air Pollution

The level (or quality) of public health depends on many biological, socioeconomic, medical-organizational, and ecological factors. An analysis of just one health indicator—the number of children with chronic illnesses in clinic records—throughout the Russian Federation reveals that the number doubled between 1980 and 1990 and reached around 6.5 million in 1990. Therefore, one out of every five children had one chronic illness. Of the 16 recorded types of illnesses, there was a higher rate of chronic pharyngitis, nasopharyngitis, and sinusitis (2.3 times the earlier figure), iron deficiency anemia (1.5 times), and bronchial asthma (1.3 times). The ecological component plays a significant role in the etiology of all of these illnesses. It is possible that if there were separate medical statistics for the urban population of large industrial cities, the rise in the rate of illness would be even more perceptible there.

Studies of the health of schoolchildren, conducted according to a single set of methods over many years (1960-1990), indicated that the number of virtually healthy children in the first grade decreased over the 30 years from 60.8 percent to 45.4 percent, and the number in the eighth grade decreased from 59.8 to 47.9 percent. The rate of chronic illness in these age groups rose from 39.2 to 54.6 percent (first grade) and from 40.2 to 52.1 percent for the eighth-graders.

The most severe effects of environmental pollution take the form of the higher rate of infant mortality and the increased frequency of birth defects.

Many studies of the effects of environmental pollution on the state of public health record a significant rise in various indicators of illness among children, primarily respiratory disorders.

Half of the adult patients have suffered from bronchial asthma since childhood. In recent years this disease has grown indisputably "younger." Cases of bronchial asthma in children in the first months of life are no longer extremely rare. In some cities the number of people with bronchial asthma is five or six times as high as it was. In Moscow, for example, the rate of bronchial asthma among children was seven times higher in 1981 than in 1949 (6.9 cases for each 1,000 children). In St. Petersburg the number of children suffering from bronchial asthma increased from 2.9 per 1,000 in 1982 to 3.7 per 1,000 in 1987. The number suffering from asthmatic bronchitis also rose: from 6 to 7.7 per 1,000 (T. Pogorelova and I. Malysheva, 1986). The rising rate of bronchopulmonary disorders is connected largely with air pollution in the cities. The rate of upper respiratory disease in children in the zone affected by chemical production units in Samara is twice as high as the average. The rate in neighborhoods near petrochemical production units and petroleum refineries is 2.5 times as high; the rate near the metallurgical combine is 4 or 5 times as high, and so forth. In a city with metallurgical industry the rate of otorhinological disease is 3-5 times the average near the combine, 2-3 times the average at a distance of 1.5 kilometers from the combine, and 1.5 times the average at a distance of 6 kilometers.

Moscow Statistics Illustrating Spatial Features of Distribution of Bronchial Asthma Among Children

The highest levels of air pollution are in the center, northwest, and northeast of the city. The rate of bronchial asthma in children within the territory of 110 pediatric clinics here is three or more times as high as indicators in "clean" districts of the city. All exceptions were closely correlated with the spatial locations of major highways and industrial enterprises. The loci of this illness are concentrated in homes situated near the zoo, the race track, the perfume factory, and other plants and major highways.

...A direct relationship between bronchopulmonary disease in children and the level of air pollution has also been discovered in several other parts of the country. The very fact that twice as many children in the Russian Federation died of bronchial asthma in 1990 as in 1980 is indicative.

The results of clinical epidemiological studies of the role of air pollution in the onset of pulmonary disease in children in one of the most highly polluted Russian cities—Nizhniy Tagil—are indicative.

Starting in the 1970s, more and more children in Nizhniy Tagil began complaining of hoarseness and breathing difficulties that did not fit the usual clinical definition of pneumonia or typical bronchial asthma. The same child could suffer from bronchial obstructions several times a year. This coincided with the start-up of the bank of coke ovens in December 1986 without the necessary dust and air filters. It was then that the rate of tracheobronchitis rose and asthmatic attacks in children became more common. The number of children hospitalized with bronchial asthma in the city also rose.

The effects of air pollution are experienced by the residents of industrial cities and of small communities located near industrial enterprises, gas and oil fields, and toxic waste disposal sites. There is so little information about the state of public health in these communities, and the findings of existing studies can only be viewed as preliminary results.

The village of Cherkasskiy near Ufa has a population of 2,300. The village is surrounded on three sides by oil refineries, a synthetic alcohol plant, and the "Khim-prom" enterprise. Concentrations of phenol in the air are 1.9-4.2 times the MAC, the level of hydrocarbons is 2.7 times the MAC, and the hydrogen sulfide level is 1.5 times the MAC. Drinking water does not meet standard requirements in terms of organoleptic or chemical indicators. The children there are more likely than those in the control group to suffer from disorders of the respiratory organs, the central nervous system, the skin, and the urinary organs. The rate of these illnesses is also higher among adults, as well as the rate of cardiovascular and otorhinolaryngological disease (materials of the Ufa Scientific Research Institute of Human Ecology and Occupational Medicine).

The pollution of the air with emissions of specific pollutants has had severe effects in several cases: Specific symptoms and complex syndromes. The most disturbing and most vivid examples are the effects of the operations of plants producing protein-vitamin concentrates and other enterprises of the microbiological industry....

The rate of bronchial asthma rose dramatically in Angarsk after the start of operations at the protein-vitamin concentrate plant in 1979. The number of cases of chronic upper respiratory disease in children increased 7.3-fold and there was an eightfold increase in the number of cases of chronic bronchitis. The mass poisoning of the population occurred in 1988.

People living near plants producing antibiotics in Saransk have complained of frequent pains in their joints and skin rashes. The growth of antibiotic production has been accompanied by coughing, sneezing, and allergic rhinitis. Special studies attest to the specific allergization of the organism to penicillin (52 percent of the respondents), the candida antigen (54.5 percent), or both antigens (29 percent).

...In the "aluminum" cities, just as in some other large industrial centers, dental pathology is accompanied by changes in the whole motor-reflex apparatus in children.

A special in-depth study of the children in Shelekhov, which is the site of an aluminum plant, revealed that the frequency of skeletal dysplasia was three times the average, corroborating the data on the osteotropic properties of fluorine compounds.

Physical Development of Children

A variety of functional and morphological defects in children exposed to the effects of air pollution arises virtually at the time of birth. This is connected with the effects of air pollution on the mother during pregnancy and prior to conception.

In Moscow the average weight of the newborns of mothers living in the zone affected by emissions from the Motor Vehicle Plant imeni Likhachev is 400 grams (or 10 percent) below the average weight in the southwestern subway region.

Cities and villages of the copper ore mining and enriching combines in the Urals have a higher number of children with extreme anthropometric characteristics. These cities are marked by lower indicators of body length at birth and less balanced anthropometric indicators.

Children weigh less on the average in Novotroitsk near the Orsk-Khalilov metallurgical combine and in Orenburg (materials of the School of Hygiene of the Orenburg Medical Institute).

A comparative analysis of the growth standards of physical development in infants and toddlers (the first three years of life) for oblast centers—Ufa, Yekaterinburg, Nizhniy Novgorod, and Samara—revealed that the worst indicators were in Ufa: clear signs of increasing asthenia (narrow chest and minimal weight combined with minimal growth). The physical development of children in different regions of Ufa revealed verifiable disparities depending on the intensity of the influence of anthropogenic factors (materials of the Bashkir Medical Institute).

Lower anthropometric indicators were also found in children of pre-school age in the zone affected by emissions of boron production units in Dalnegorsk, ferroalloy production units and enterprises producing building materials (keramzit gravel and asphalt) in Moscow, copper smelting and aluminum plants, and many other production units.

In one of the most highly polluted neighborhoods in Moscow (Kalininskiy Rayon), there were 5 percent fewer children between the ages of 3 and 7 with balanced (or proportional) physical development and almost twice as many children who were underweight or overweight.

These deviations from anthropometric standards are indicators of the state of pediatric health at the time of

the study and indicators of possible subsequent changes. Children with maximum deviations from average anthropometric characteristics are known to suffer more frequently from pathological changes than children who deviate little from the norm. An analysis of the development of children in the "copper" cities of the Urals indicates retarded physical and neuropsychological development (these children are older when they take their first steps) and delays in primary dentition. These children are also older than the average when they begin speaking. Therefore, changes in the normal physical development of children, particularly in combination with an unhealthy lifestyle (hypodynamia, inadequate physical training, and so forth), can lead to deviations in the state of their health later as well. As a rule, however, it is rarely possible to define the main external factor or only external factor destroying the nervous system in children. Special studies have established the influence of small doses of lead, mercury, and organic phosphates (pesticides), a shortage of iodine, and possibly of goitrogenic substances affecting the neuropsychological development of children.

Paradoxically, the development of the system most vulnerable to ecopathogenic influences in children, namely the brain, and deviations in the neuropsychological development of children in the zones of ecological stress have not attracted enough attention from pediatricians, psychoneurologists, hygienists, and ecologists.

Health of the Adult Population and Air Pollution

It is difficult to assess the state of health of the adult population in cities with higher levels of environmental pollution. This is due to the lack of official statistical reports and to the procedural difficulties of keeping records of this kind, which require consideration for the role of occupational factors, bad habits, and the lifestyle in general. There are some studies that offer convincing evidence of the negative role of air pollution.

The rate of chronic respiratory and pulmonary disease (pneumonia, bronchitis, laryngitis, and pharyngitis) and otitis in adults between the ages of 15 and 60 in Vladimir was 2.8 times as high in the zone affected by emissions from the chemical plant as in the control group.

A detailed study of the effects of air pollution on public health was conducted in Novokuznetsk.

The non-specific pulmonary disorders of workers of the metallurgical combine were studied to assess the effects of air pollution on the health of the adult population. In accordance with hygienic air quality surveys in the developed part of the city, workers were divided into one group living in the zone of maximum air pollution, a second group living in regions with average pollution, and a third in the zone of minimal pollution.

The engineering and technical personnel and employees of the combine with no contact with occupational hazards of a chemical nature were used as the control group. This method revealed some tendencies in the combined

effects of chemical pollutants on the health of workers in production and non-production areas.

Perceptible differences were discovered in an analysis of the general rate of illness among workers living in the zone of maximum air pollution and workers in the zone of minimal pollution.

Unfavorable ecological conditions lead to the development of occupational pathology. The Novokuznetsk aluminum plant workers living near the plant, for example, were twice as likely to suffer from occupational fluorosis. It developed much more quickly in this group, and cases of toxic hepatitis and specific changes in dental enamel were more common, reflecting the influence of fluorides at work and at home.

A study of the effects of air pollution on the frequency of requests for emergency medical treatment for cardiovascular and pulmonary disease revealed a direct connection. The number of requests for emergency treatment for cardiovascular disorders was 2.4 times as high as in the zone with a relatively low level of air pollution (materials of the Comprehensive Hygiene and Occupational Disease Institute of the Siberian Department of the Russian Academy of Medical Sciences in Novokuznetsk).

Similar patterns were observed in other large industrial centers in East Siberia—Bratsk and Angarsk.

Indicators of requests for medical assistance by adults with no relationship to occupational hazards were much more numerous in Bratsk than in other cities in Irkutsk Oblast—Selenginsk and Baykalsk. The population of Bratsk is more likely to suffer from disorders of the nervous system, sensory organs, and cardiovascular system (1.2-1.9 times as likely). Besides this, the inhabitants of Bratsk are more likely to seek treatment for immunologic disorders and diseases (N. Matorova et al, 1990).

A verifiable connection was established in Angarsk between the levels of short-term air pollution in the city and the daily patient rate—and in some years, the daily death rate. Chemical air pollution was responsible for 6-21 percent of the fluctuations in the daily patient rate (for different categories of illnesses) and 2.7-19.4 percent of fluctuations in the daily death rate (Ya. Leshchenko et al, 1993).

Public Health and Food Pollution

Food can be the source and agent of many chemicals posing a potential threat to human health.

The results of surveys conducted from 1988 to 1991/92 indicate that from 0.8 to 3.8 percent of the analyzed samples of food products exceeded public health limits for lead, from 1.1 to 1.7 samples exceeded the cadmium limits, and from 0.4 to 4.7 percent exceeded mercury limits (V. Tutelyan et al, 1993).

High levels of environmental pollution by metals in the environs of metallurgical production units can cause the considerable accumulation of toxic metals in vegetables, fruit, and berries. The content of heavy metals—lead, cadmium, chromium, and nickel—is extremely high in vegetables and berries grown between the cities of Revda and Pervouralsk in direct proximity to [passage omitted in source]

In Russia as a whole, there were signs of nitrate pollution in from 9.8 to 7.7 percent of all analyzed samples of food products.

Levels of food pollution began to decline in 1990. The degree of produce pollution by pesticides also decreased (from 3.2-3.5 percent in 1988/89 to 1.7-2 percent in 1991/92), but pesticide levels are still quite high in some parts of Russia. In Krasnodar Kray, for example, pesticide use is two or three times the national average.

Studies of the state of public health in different parts of Krasnodar Kray indicate that high pesticide levels in communities in grain and rice farming regions are accompanied by higher rates of otorhinolaryngological disease, bronchial asthma, tuberculosis of the respiratory system, severe respiratory infections, and retarded physical development in children. Changes in the state of health are less pronounced in the adult population, but the rate of treatment for arterial hypertension and disorders of the digestive organs is three times as high.

The health of children is much worse in regions with high pesticide levels in Rostov Oblast.

Reproductive Health

The reproductive health of the population is one of the most accurate indicators of public health and an indicator of local ecological conditions.

Environmental pollution causes disturbances of endocrine functions and the immune, hemopoietic, and other systems in pregnant women and infants.

The rate of severe pregnancy complications is constantly rising in Russia. The rate of pregnancy-related toxemia rose by 41 percent between 1981 and 1989, representing 7.7 cases per 100 births. Furthermore, cases of severe forms of toxemia—eclampsia and preeclampsia—increased 4.8-fold. Pregnant women were 2.6 times as likely to suffer from anemia, twice as likely to suffer from kidney disorders, and 21.9 percent more likely to suffer from cardiovascular disease (N. Vaganov, 1991).

Although the rate of prenatal problems has risen everywhere, the rise is more pronounced in large industrial centers, where many women are employed in jobs with hazardous working conditions.

In Ufa the rate of toxemia in pregnant women rose from 8.9 to 20.1 per 100 births in the last 21 years. This is almost three times as high as the republic average. The

reason is the employment of many of the women at enterprises of the petrochemical complex (Bashkir Medical Institute, 1992).

It is extremely difficult to gage the effects of environmental pollution in these cities on the state of reproductive functions. An analysis of the health indicators of pregnant women not employed in hazardous jobs but living in highly unsatisfactory ecological conditions confirms the presence of significant disparities.

Women in the metallurgical cities of the Urals—Kamensk-Uralsk, Kirovograd, and the Novokuznetsk neighborhoods near the aluminum plant—were more likely than the women in the control group to suffer miscarriages, spontaneous abortions, premature births, and other pathological disorders.

A similar situation was recorded in Krasnokamsk in Perm Oblast, the site of a pulp combine.

In Baykalsk and Bratsk, other cities with pulp and paper industry, and in Shelekhov, a city with aluminum production units, disorders of reproductive functions were much more severe than in a "cleaner" city in East Siberia.

Infant Mortality

The rate of infant mortality is an important indicator of the quality of public health and social welfare.

It is extremely difficult to judge the effects of environmental pollution in cities on the rate of infant mortality. Studies in this field are extremely few in number.

Indicators of the early neonatal death of infants (death in the first week of life) over nine years in seven cities and seven rural rayons inhabited by around 2 million people were studied in Chelyabinsk Oblast (Chelyabinsk-40). The rate of infant mortality turned out to be most closely related to the level of nitrogen dioxide emissions (correlative coefficient of $r=0.76$) and hydrocarbons ($r=0.79$). These factors have an impact of around 60 percent on the rate of infant mortality. The same study, incidentally, did not establish a connection between radiation levels and birth defects and early neonatal mortality.

A comparative analysis of infant mortality rates in the urban and rural populations is of some interest in revealing the role of the ecological factor.

The rate was higher in urban locations in 14 oblasts. They included such industrially developed territories as Moscow, Kursk, Lipetsk, Rostov, Orenburg, and Novosibirsk oblasts and the Republic of Bashkiria.

Effects of Environmental Pollution on Rate of Malignant Tumors in Russia

The rise in the rate of malignant neoplasms in Russia is staying ahead of general population growth and the growth of the population over the age of 60.

The number of new cases of oncological disease among citydwellers increased 1.7-fold in the last 20 years. The number of people first diagnosed with malignant growths in Russia rose by 23 percent between 1980 and 1991 and reached 394,300, corresponding to an average of 1,080 new patients a day. The number of patients who died during this period rose by 30 percent and amounted to 290,500 in 1991 (an average of 796 deaths a day). Death from malignant neoplasms has reduced the average lifespan of the male population of Russia by 2.8 years and the female lifespan by 2.2 years. The amount of hypothetical unproduced national income resulting from this is 4.1 billion rubles (in 1990 prices). The number of new cases of disease is expected to rise to 480,000 by the year 2000, or one new case each 66 seconds, and the number of deaths is expected to rise to 346,000 (or 940 a day). Around 18 of every 100 babies born in Russia in 1991 could suffer from malignant neoplasms, and the average lifespan of patients in some age groups could be as low as one-seventeenth of the general lifespan of these age groups (Ye. Aksel et al, 1993). The number of people categorized as completely disabled by malignant neoplasms exceeded 72,000 in 1990 in Russia, or 20.2 percent of the total number.

Conclusion

The adverse effects of environmental pollution on public health in Russia are a genuine threat to national security and can affect each of us. According to current estimates, around 20 percent of the total rate of illness is connected with the irritating effects of environmental pollution; in some areas the figure can be much higher. Regrettably, conclusive studies providing quantitative assessments of the contribution of environmental pollution to the development of various diseases are extremely few in number. The definite deterioration of public health indicators in recent years has been connected with environmental pollution and with socioeconomic difficulties.

A more complete understanding of the role of environmental pollution in changes in the state of public health could result from the improvement of several types of activity on the federal, regional, and local levels. They include the following:

- more detailed reports of the discharges and emissions of all potential polluters, with lists of the substances entering the atmosphere and surface and ground water, and detailed reports of the substances in solid waste disposal sites;
- improvements in the pollution monitoring system for more complete records of the whole range of pollutants in a specific territory and for information about the spatial distribution of pollutants;
- the widespread use of modern remote methods of emission control—such as the laser and sonar systems—for constant and current data on pollutants;

- a better system of regional and federal public health statistics with more detailed breakdowns (by ages and territories);
- the collection of statistical data for small territories that might be subject to the effects of various types of pollutants;
- analytical epidemiological studies to determine risk and dose indicators for specific pollutants and their combinations;
- the compilation and implementation of national programs to minimize the effects of all substances known to be highly toxic (benzpyrene, PAC's, PCB's, radon, beryllium, cadmium, lead, and other toxic metals).

Vladivostok Orders Halt To Scrapping of Atomic Submarines

LD2303154094 Moscow Mayak Radio Network
in Russian 1430 GMT 23 Mar 94

[Text] Today, the administration of Maritime Kray released a statement in which it said that dismantling and scrapping of atomic submarines is to be halted at the Zvezda yard at the settlement of Bolshoy Kamen. Discharge of liquid radioactive waste stored aboard the tanker DMT-5 into the Sea of Japan is also planned. The tanker is now in a dangerous condition. The radioactive waste poses a real threat to Vladivostok and a number of areas of Maritime Kray. That was a report from POST-FACTUM agency.

Norwegian Document on Russian Reactors' Disposal Cited

PM2303111794 Moscow IZVESTIYA in Russian
23 Mar 94 p 3

[Report by Marat Zubko: "Russia Will Sink Reactors in Kara Sea"]

[Text] Helsinki—The Norwegian ecological organization "Bellona" has found out the details of the forthcoming removal from combat service of 150 nuclear submarines in the Northern Fleet.

"Bellona" members Nils Bemer and Tomas Nilsen [both names as transliterated] have gained access to Northern Fleet documents which state that in accordance with the START II treaty within the next few years Russia must destroy 150 nuclear submarines with 278 reactors on board.

The authors of the report assert that so far only two submarines have been dismantled in the Northern Fleet but that nuclear fuel has been removed from the reactors of 34 ships. The main part of the submarines will be dismantled in Severodvinsk: There they will extract 206 reactors and 45,000 used fuel elements from the submarines' bellies.

The Norwegians claim that new dry docks and storage facilities for radioactive waste, and moorings for the submarines which have been written off are to be constructed on the Kola peninsula.

The construction should have begun already but so far the majority of establishments are at the planning stage, the report says.

Of course, some of the fuel elements, the "Bellona" experts estimate, could be sent to the "Mayak" storage facility in Siberia. But what is to be done with the other fuel elements, the reactors themselves, and their reactor rooms? In this connection Berner and Nilsen have the following to say:

"Of the documents we have read and the talks we have had with knowledgeable people it has become clear to us that the Russian authorities have two possible courses of action. The first is to return to the practice of submerging radioactive waste, including reactors, in the Kara Sea, which Russia renounced a few years ago. The second is to construct a major new storage facility somewhere in the Northwest of Russia."

"However," the report's authors continue, "it is known that the storage facilities existing on the Kola peninsula are already full and there is no money to construct new ones. So we believe that the most feasible option is connected with burying the waste at sea. Perhaps that is why Russia is not signing the London convention which bans the discharge of waste into the seas and oceans...."

Pollution Situation Needs 'Urgent Action'

*PM2203140194 Moscow SELSKAYA ZHIZN
in Russian 12 Mar 94 p5*

[Article by SELSKAYA ZHIZN scientific observer Leonid Kruglov: "Departed From Life; Alarming Ecological Situation in Russia Demands Urgent Action"]

[Excerpt] [Passage omitted] National environmental reports only became public here at the end of the eighties. They contain specific information on the current state of our environment. They cite data on the amount of harmful substances discharged into the atmosphere, the pollution of soil and drinking water sources, and the radiation situation. The compilation of these reports is painstaking work performed every year by environmental experts and specialists.

The Russian Federation Ministry of the Environment and Natural Resources recently published the latest State Report for 1992. In the preface to it, Minister V.I. Danilov-Danilyan acknowledges that the state of the environment in Russia as a whole is unsatisfactory: The atmosphere, water, and soil are still being heavily polluted with gaseous, liquid, and solid waste from industry and consumers alike. Moreover, as one should expect, the general slump in output has not led to a similar reduction in pollution, as enterprises in crisis have begun

to cut environmental protection costs. Thus the economic situation in the country is aggravating the environmental situation.

The facts cited in this document are not for those of a nervous disposition. The volume of polluting substances discharged into the atmosphere from stationary sources in Russia alone amounts to 28.2 million tonnes. Highly toxic cyanides, arsenic, fluorides, and heavy metal oxides are spewed from these "volcanoes." Their emissions exceed the maximum permissible concentration in the air basin of 171 cities. In Chita, Taganrog, Lipetsk, Bratsk, and Ulyanovsk—in fact, a total of 44 industrial centers in Russia—the atmospheric pollution index has reached a level dangerous to the health of millions of people.

With one-quarter of the world's fresh water resources concentrated in Lake Baykal, we are contriving to pollute these crystal-clear waters with toxins from outmoded pulp and paper combines. The fabled lake's own mechanism of biological self-purification is on the brink of collapse. What then can one say about ordinary reservoirs? In 1992, 39 percent of all untreated sewage flowing into Russia's rivers was discharged into the Volga basin alone.

Due to economic difficulties, the use of pesticides in agriculture fell from 150,000 tonnes in the eighties to 100,000 tonnes in 1992. But supporters of the green movement have no cause to celebrate. Russia uses tens, if not hundreds of different types of toxic chemicals banned in the countries where they are produced, but with a market here because of their low price. They are extremely toxic. Moreover, these toxins have the ability to accumulate in the soil for long periods of time. Analysis shows that soil in Moscow Oblast and Irkutsk Oblast still contains DDT, banned many years ago.

We will not try to explain what all these "curies" and other units for measuring radiation levels mean. For the majority of people, these scientific terms mean nothing, but their lives are no easier for all that. As of January 1993, the territory polluted with radioactive nuclides from Chernobyl—cesium-137 averaging one to five "curies" per square kilometer—includes 16 oblasts and Mordovia. A total of 21,861,000 people currently live there, mainly villagers. By law, they are all due state benefits and compensation. But who will guarantee that even these few "curies" will not affect the health of future generations? Once again, it seems, we are going to rely on the Russian "maybe." Wait and see. But will we live to see?

Analysis of the information in the State Report allows us to draw the uncomfortable conclusion that all these negative ecological factors put together have led to a serious deterioration in the environment in the main regions where tens of millions of Russians live. Living there is dangerous, and turning a blind eye is criminal.

No assurances and entreaties that everything will be better in the future arouse enthusiasm in anyone anymore. We need a long-term, single-minded program of action. From this point of view, we would like to assess the constructiveness of the Russian Presidential Edict "On the State Strategy of the Russian Federation To Protect the Environment and Ensure Steady Development," published in February this year. Is there, for example, any real foundation to the government directive to approve within two months a plan of action to protect the environment in 1994-95?

The basic principles of the strategy, in the drafting of which the Russian Federation Ministry of the Environment and Natural Resources and the Russian Federation Security Council Interdepartmental Commission for Environmental Safety took part, provide for the environmentally sound location and development of industrial and agricultural enterprises; sustainable and rational use of natural resources; protection of the environment in areas of human habitation; the restoration of shattered ecosystems; the utilization of waste; and other urgent measures conducive to improvement of the environment in Russia.

The time given to implement the edict is extremely short. There is much to do. Sources of pollution in environmental "hotspots"—areas where it is simply dangerous to live—should be eliminated first and foremost. The state must make all the necessary budgetary allocations. There is no alternative when the nation's health is at stake.

It is up to the state to call those directly responsible for environmental damage strictly to account. Anyone who breaks the Russian Law on Protection of the Environment must be made to pay. With the transition to market relations, sources of investment in national environmental safety are broadening considerably. The taxpayer is not obliged to pay for someone else's economic mistakes. This also applies to the agro-industrial complex.

Any producer—however vital his product may be—must be placed in the situation where, because of the risk of being ruined, it is to his disadvantage to engage in economic operations which pollute rivers, soil, or atmosphere.

If the environment suffers, do not expect any return. This principle must become mandatory for all. Sometimes, however, this return is within arm's reach. Let us take a specific example. Any poultry plant, apart from anything else, is a major "supplier" of extremely valuable organic fertilizer. With mineral fertilizers expensive and in short supply, it is perfectly realistic to develop the technology of biothermal processing of the droppings, thereby setting up production of poudrette, fertility grains. Progressive private farms are already successfully selling the surplus of this valuable product to farms and kitchen gardens both here and abroad at a considerable profit. At present, however, toxic waste from big state poultry plants continues to pollute underground springs

and rivers, for which fines are paid amidst cries of being on the brink of closure because of the high price of mixed feed.

The economic principle must form the basis of the mechanism for the use of natural resources in our country. It is naive to assume that the Ministry of the Environment and Natural Resources is solely responsible for instilling order in this respect. It certainly is not a departmental matter: It is a matter of state.

The time for debates and discussions on the methods and approaches to deciding upon a strategy of national environmental salvation is long gone. It is time to act!

There is a scientific term: Survival. It concerns all living beings, man included. People, like any other creature on this planet, need clean air, unpolluted water, and good soil—a source of food. Russia's citizens have a constitutional right to a decent environment. This must not be forgotten in the face of future generations.

Statute on State Oversight of Land Use, Preservation

94WN0202A Moscow DELOVOY MIR in Russian
7-13 Feb 94 pp 20-21

[Statute on Procedure for Exercising State Oversight of Land Use and Protection in Russian Federation]

[Text]

I. General Provisions

1. This statute will define the procedure for exercising state oversight of the use and protection of land in the Russian Federation. This procedure will be binding for all physical persons, officials, and juridical persons.

2. State oversight of land use and protection will be exercised by the appropriate agencies of the representative and executive branches of government and by state agencies specifically authorized to do this by existing laws. The purpose of state oversight of land use and protection is guaranteed compliance with the requirements of land legislation by all physical persons, officials, and juridical persons for the effective use and protection of land.

3. The state agencies specifically authorized to exercise state oversight of land use and protection are the following:

the Russian Federation Committee on Land Resources and Land Management and its local agencies;

the Russian Federation Ministry of Environmental Protection and Natural Resources and its local agencies;

the Russian Federation State Committee for Sanitary-Epidemiological Oversight and the agencies and institutions of the Russian Federation State Sanitary and Epidemiological Service;

the Russian Federation State Committee on Questions of Architecture and Construction and its local agencies.

These agencies will perform their functions in conjunction with agencies of the representative and executive branches of government and with each other.

4. The chief state inspector of land use and protection in the Russian Federation will be the chairman of the Russian Federation Committee on Land Resources and Land Management, and the deputy chairmen of the committee and the chief of its administration for state oversight of land use and protection will be the deputies of the chief state inspector of land use and protection in the Russian Federation.

The chief state inspector of land use and protection in the Russian Federation and his deputies will be personally responsible for organizing and carrying out state oversight of land use and protection in the Russian Federation, and territorial state inspectors of land use and protection and their deputies will be personally responsible for this within their territories.

The chairmen of the land resource and land management committees of members of the Russian Federation and of cities and rayons will be the territorial state inspectors of land use and protection in these territories, and the deputy chairman of these committees and chiefs of their subdivisions for state oversight of land use and protection will serve as the deputies of the corresponding state inspectors of land use and protection.

The chairmen of land resource and land management committees—the state inspectors of land use and protection of members of the Russian Federation—will be appointed to office and removed from office by the chairman of the Russian Federation Committee on Land Resources and Land Management—the chief state inspector of land use and protection in the Russian Federation—with the consent of agencies of the executive branch of government of these members of the Russian Federation.

Officials and specialists of the Russian Federation Committee on Land Resources and Land Management and the committees on land resources and land management of members of the Russian Federation and of cities and rayons with the responsibility of state oversight of land use and protection will be the inspectors of land use and protection in the corresponding territories.

The chief state inspector of land use and protection in the Russian Federation and the state inspectors and inspectors of land use and protection will be issued the proper credentials by agencies of the executive branch of government.

The chief state inspector of land use and protection in the Russian Federation and the state inspectors of land use and protection will have a stamp and official forms of documents inscribed with the State Seal of the Russian Federation and their titles.

II. Functions of Agencies Exercising State Oversight of Land Use and Protection

5. Agencies of the Russian Federation Committee on Land Resources and Land Management, the Russian Federation Ministry of Environmental Protection and Natural Resources, the Russian Federation State Committee on Questions of Architecture and Construction, and the Russian Federation State Committee for Sanitary-Epidemiological Oversight and the agencies and institutions of the Russian Federation State Sanitary and Epidemiological Service will do the following:

exercise state oversight of land use and protection within their jurisdiction;

arrange for inspections and evaluations of changes of land quality and the functional zoning of cities and other populated communities;

take measures to eliminate violations of land laws;

participate in drafting administrative ordinances and legislative instruments pertaining to land use and protection;

submit proposals according to the established procedure on the withdrawal of damaged and polluted land from use when the further use of the land could jeopardize human life and health, result in disasters and emergencies, destroy resources of historical and cultural value and natural landscapes, and cause adverse environmental changes and the pollution of agricultural products and sources of water;

notify the population of the state of land resources, the effectiveness of their use, and measures taken to protect the land;

participate in the coordination of urban development and land management documents and in the work of commissions inspecting reclaimed, recultivated, and other land where measures have been taken to enhance its quality and in the inspection of facilities installed for the protection of land.

6. The Russian Federation Committee on Land Resources and Land Management and its local agencies will exercise state oversight of the following:

the compliance of enterprises, institutions, organizations, and citizens with land laws and regulations governing the use of parcels of land in accordance with their stated purpose;

the prevention of the unauthorized occupation of parcels of land;

the presentation of reports on the existence, state, and use of land resources and on the existence of available land;

the timely recultivation of damaged lands, the restoration of the fertility and other positive properties of land,

and the removal, use, and preservation of the fertile layer of soil during work with potential damaging effects on the land;

the design, location, and construction of facilities affecting the state of land resources;

the timely and competent completion of measures to improve land resources and to prevent and correct the effects of soil erosion, salinization, swamping, flooding, desertification, desiccation, compaction, littering, pollution, and other processes causing the degradation of the land;

the observance of the deadlines set for the processing of requests (or claims) from citizens for parcels of land;

the installation and maintenance of survey marks;

the timely return of land granted for temporary use.

7. The Russian Federation Ministry of Environmental Protection and Natural Resources and its local agencies will exercise state oversight of the following:

the fulfillment of environmental requirements during the allocation of land for all types of economic activity;

compliance with ecological standards during the development of new equipment, technology, and materials for the cultivation of soil and in the location, design, construction, and operation of enterprises and other facilities;

the prevention of littering and the pollution of the soil with sewage, pesticides, mineral fertilizers, and toxic and radioactive substances;

compliance with the regulations of land use for environmental, nature sanctuary, and recreational purposes;

the completion of measures stipulated in land management plans and other project plans for the prevention and elimination of processes causing the degradation and pollution of land and for the protection of soil and conservation of land resources;

the accuracy of information used in state land survey records and in the monitoring of land quality and land management;

the observance of land laws pertaining to the protection of land;

the prevention of the unauthorized occupation of lands used for environmental, nature sanctuary, and recreational purposes;

the completion of work for the recultivation of damaged lands;

the completion of measures to prevent the deterioration and destruction of topsoil and the degradation of land and to restore unusable agricultural area and polluted land.

8. The Russian Federation State Committee for Sanitary-Epidemiological Oversight and the agencies and institutions of the Russian Federation State Sanitary and Epidemiological Service will exercise state oversight of the following:

the observance of public health laws in the use of parcels of land, the establishment of protective, protective-sanitary, therapeutic, and recreational zones, and the design and operation of enterprises and facilities for the use, processing, and disposal of radioactive and toxic materials and production waste;

the prevention of the pollution of land with the pathogens of parasitic and infectious diseases.

9. The Russian Federation State Committee on Questions of Architecture and Construction and its local agencies will exercise state oversight of the following:

the supervision of all types of urban development activity in cities and other populated communities in accordance with approved urban development documents;

the observance of the standards and rules of urban development and zoning laws in cities and other populated communities;

the observance of the official procedure for the use of territories with special urban development regulations;

the prevention of the unauthorized construction or demolition of buildings and installations and the removal of public greenery in cities and other populated communities;

the allocation of parcels of land in cities and other populated communities in accordance with their stated purpose and urban development requirements.

III. Rights and Obligations of Officials of Agencies Exercising State Oversight of Land Use and Protection

10. The chief state inspector of land use and protection in the Russian Federation and his deputies, state inspectors of land use and protection and their deputies, and officials of the Russian Federation Ministry of Environmental Protection and Natural Resources and the Russian Federation State Committee on Questions of Architecture and Construction and their local agencies, the Russian Federation State Committee for Sanitary-Epidemiological Oversight, and agencies and institutions of the Russian Federation State Sanitary and Epidemiological Service will be empowered to do the following in accordance with their assigned functions in the state oversight of land use and protection and within their own jurisdiction:

a) send reports to the appropriate agencies on violations of land laws for the institution of proceedings against the guilty parties;

b) petition courts and arbitration boards without charge for compensation for damages caused by violations of land laws, for the reversal of unlawful decisions connected with the confiscation and allocation of parcels of land, and for the imposition of fines on physical persons and officials;

c) suspend industrial, civil, and other construction projects, the extraction of minerals and peat, the operation of facilities, and all types of agrotechnical, forest reclamation, geological prospecting, exploratory, geodesic, and other activities if they involve violations of land laws or official land use regulations in territories under special protection and could lead to the destruction, pollution, contamination, or deterioration of the fertile layer of soil and the development of erosion, salinization, swamping, and other processes reducing the fertility of soil, including the soil in adjacent territories, or if they are being conducted in accordance with project plans for which no environmental impact studies were ordered or for which the impact reports were negative;

d) submit proposals to the local administration on the complete or partial confiscation (or redemption) of parcels of land in the cases envisaged in land laws;

e) compile reports of violations of land laws and submit them for consideration to the appropriate commissions for the institution of administrative proceedings against the guilty parties or make judgments on cases of violations of land laws autonomously, within the limits of the fines established by law, if the fine is not in excess of five times the minimum wage in the case of citizens, 10 times the minimum salary in the case of officials, and 20 times the minimum salary in the case of juridical persons. Officials of the Russian Federation State Committee for Sanitary-Epidemiological Oversight and agencies and institutions of the Russian Federation State Sanitary and Epidemiological Service will make judgments on cases of violations of land laws according to the procedure established in the Law of the RSFSR "On the Sanitary and Epidemiological Well-Being of the Population";

f) be granted unimpeded access to enterprises, organizations, and institutions upon the presentation of official credentials and inspect parcels of land under private ownership, proprietorship, use, and lease and parcels of land occupied by military, defense, and other specialized facilities—with a view to the official rules of access to them;

g) issue binding orders to enterprises, organizations, institutions, and citizens for the protection of land and the elimination of violations of land laws;

h) obtain duly approved statistical reports on the state of land resources from ministries and departments;

i) enlist the aid of specialists through official channels for inspections of land resources, environmental impact studies, and verifications of compliance with land protection orders;

j) suspend the implementation of unlawful decisions to confiscate or allocate parcels of land until protests have been processed by the appropriate agencies (the superior agency of the executive branch of government, the court, or the arbitration board);

k) issue binding orders to the appropriate finance and credit agencies for the termination of financing (or credit) for construction projects, the operation of facilities, and other activities following their suspension and in the absence of documents certifying land rights.

The chief state inspector of land use and protection in the Russian Federation and his deputies and the state inspectors of land use and protection and their deputies will also be empowered to monitor auctions, competitive bidding sessions, purchase and sale transactions, gifts, exchanges, mortgages, and leases of parcels of land and other operations with land and propose the official invalidation of operations conducted in violation of existing laws.

The inspectors of land use and protection will exercise the rights of state inspectors of land use and protection in clauses "e" (with the exception of the right to make judgments on cases of violations of land laws autonomously), "f," and "i" of this subsection.

Officials and physical persons preventing the exercise of state oversight of the condition, protection, and use of land with acts of violence or threats of violence against the officials of agencies specifically authorized to exercise state oversight of land use and protection will be held legally liable.

Agencies of the Russian Federation Ministry of Internal Affairs will assist the officials of agencies specifically authorized to exercise state oversight of land use and protection within their jurisdiction.

Officials exercising state oversight of land use and protection will be responsible for the timely institution of measures against violators of land laws and for the objectivity of inspection reports.

Losses incurred by land titleholders, land owners, land users, and land leaseholders as a result of the unlawful actions of officials exercising state oversight of land use and protection will be recovered according to the procedure established by law.

Complaints about the actions of officials exercising state oversight of land use and protection will be submitted to a superior official or to a court.

The chief state inspector of land use and protection in the Russian Federation and his deputies, state inspectors of land use and protection and their deputies, and inspectors of land use and protection will be allowed to carry firearms in the performance of their official duties.

Agencies of the executive branch of government of members of the Russian Federation may establish guarantees of social protection for the officials exercising state oversight of land use and protection.

11. The Russian Federation Committee on Land Resources and Land Management and other agencies exercising state oversight of land use and protection will compile an annual report on the oversight of land use and protection.

IV. Procedure for Imposing Fines for Violations of Land Laws

12. Agencies of the Russian Federation Committee on Land Resources and Land Management, the Russian Federation Ministry of Environmental Protection and Natural Resources, the Russian Federation State Committee on Questions of Architecture and Construction, the Russian Federation State Committee for Sanitary-Epidemiological Oversight, and agencies and institutions of the Russian Federation State Sanitary and Epidemiological Service will impose fines for violations of land laws in administrative proceedings within their jurisdiction within two months of the date the violation was discovered, and within two months of the date the violation was committed in some cases.

13. Agencies of the Russian Federation Committee on Land Resources and Land Management will impose fines for the following:

the unauthorized occupation of parcels of land and the unlawful actions of officials and juridical persons leading to the unauthorized occupation of land;

the inefficient use of agricultural land and the failure to carry out obligatory measures for the improvement of land, the protection of soil from wind and water erosion, and the prevention of other processes causing the deterioration of soil;

the use of land resources for other than their stated purpose and the use of methods damaging the land;

the systematic nonpayment of land fees;

littering and the deterioration and destruction of top soil;

the violation of deadlines for the return of temporarily occupied land and the nonfulfillment of obligations to restore the land to the condition suitable for its designated purpose;

the design, location, construction, and start-up of facilities with an adverse effect on the quality of land;

the falsification of data on the quality and use of land;

the violation of deadlines for the consideration of requests (or claims) by citizens for parcels of land and the concealment of information about the existence of available land;

the destruction of survey marks;

the failure to comply, or the late compliance, with orders from the officials of agencies exercising state oversight of land use and protection for the elimination of violations of land laws.

14. Agencies of the Russian Federation Ministry of Environmental Protection and Natural Resources will impose fines for the following:

the unauthorized occupation of land designated for environmental, nature sanctuary, therapeutic, and recreational purposes;

littering;

the pollution of land with chemical (or toxic) and radioactive substances, production waste, and sewage;

the deterioration and destruction of top soil, the inefficient use of agricultural land, the failure to carry out obligatory measures to improve the land and protect the soil from wind and water erosion and to prevent other processes causing the deterioration of soil;

the nonfulfillment of obligations to return temporarily used land to the condition suitable for its designated purpose;

the design, location, construction, and start-up of facilities with an adverse effect on the ecological state of the land;

unlawful actions by officials and juridical persons leading to the unauthorized occupation of land designated for environmental, nature sanctuary, therapeutic, and recreational purposes, and violations of the official rules governing the use of these areas and other areas with special conditions of use;

the failure to comply, or the late compliance, with orders from officials of the ministry and its local agencies for the elimination of violations of land laws.

15. Agencies of the Russian Federation State Committee on Questions of Architecture and Construction will impose fines for the following:

the unauthorized occupation of parcels of land and the unlawful actions of officials leading to the unauthorized occupation of land in cities and other populated communities;

unauthorized construction;

the use of parcels of land for other than their designated purpose and the violation of the specifications of urban development documents in the allocation of land;

the design, location, construction, and start-up of facilities with an adverse effect on the state of land resources;

the failure to comply, or the late compliance, with orders from the officials of the committee and its local agencies for the elimination of violations of land laws;

the violation of deadlines for the consideration of requests (or claims) from citizens for parcels of land in cities and other populated communities.

16. The Russian Federation State Committee for Sanitary-Epidemiological Oversight and the agencies and institutions of the Russian Federation State Sanitary and Epidemiological Service will impose fines for the following:

unauthorized construction in the event of violations of sanitary and epidemiological rules and standards of soil protection;

the design, construction, and start-up of facilities with an adverse effect on the state of land resources;

the pollution of land with chemical (or toxic) and radioactive substances and its contamination with the pathogens of bacterial, parasitic, and infectious diseases;

the failure to comply, or the late compliance, with orders from officials of the committee and of the agencies and institutions of the Russian Federation State Sanitary and Epidemiological Service for the elimination of violations of land laws.

17. Cases of the commission of the violations listed in subsections 12-16 of this statute will be investigated by the commissions of agencies specifically authorized to exercise oversight in accordance with laws on administrative violations and by state inspectors of land use and protection and the officials of these agencies within their jurisdiction, as stipulated in clause "e" of Subsection 10 of this statute.

18. Fines imposed for violations of land laws will be paid to the following:

agencies of the Russian Federation Committee on Land Resources and Land Management for the formation of the special monetary funds of committees of land resources and land management in accordance with Edict No 2162 of the President of the Russian Federation of 16 December 1993 "On Stricter State Oversight of Land Use and Protection During the Institution of Land Reform";

agencies of the Russian Federation Ministry of Environmental Protection and Natural Resources, the Russian Federation State Committee for Sanitary-Epidemiological Oversight, and agencies and institutions of the Russian Federation State Sanitary and Epidemiological Service in accordance with the laws of the RSFSR "On Environmental Protection" and "On the Sanitary and Epidemiological Well-Being of the Population" for the formation of extra-budgetary ecological funds;

agencies of the Russian Federation State Committee on Questions of Architecture and Construction for deposit in their budgets.

If the fine is not paid within 15 days, the collection of money in the amount of the fine from juridical persons (with the exception of foreign and international organizations) held liable for violations of land laws will be conducted without recourse to the courts on the basis of the judgments of officials or commissions of agencies specifically authorized to exercise state oversight of land use and protection.

The collection of money from foreign and international organizations, unincorporated entrepreneurs, officials, and citizens will be conducted on the basis of the decision of an arbitration board or court.

19. The Russian Federation Committee on Land Resources and Land Management, Russian Federation Ministry of Environmental Protection and Natural Resources, Russian Federation State Committee for Sanitary-Epidemiological Oversight, and Russian Federation State Committee on Questions of Architecture and Construction will issue instructions and provide explanations of the procedure for exercising state oversight of land use and protection and approve the format of the credentials of the state inspector of land use and protection and other documents required in the exercise of state oversight of land use and protection.

Japanese-Funded Reprocessing Plant 'Entirely Realistic'

PM2803084394 Moscow Russian Television Network in Russian 1700 GMT 19 Mar 94

[From the "Vesti" newscast: Video report from Vladivostok by M. Voznesenskiy and V. Domovidov, identified by caption]

[Text] [170848] [Voznesenskiy over video of Kozyrev arrival at Vladivostok airport] The Maritime Kray Administration had a special stake in the meeting of the heads of the Russian and U.S. foreign policy departments at Vladivostok airport.

The point is that the situation around the construction of installations for reprocessing liquid nuclear waste from our nuclear submarines has become deadlocked: On the one hand the Japanese are ready to share this problem with us, and provide us with both money and equipment. But on one condition only....

[Ye. Nozdratenko, head of Maritime Kray Administration, identified by caption] Namely that this installation is built in Maritime Kray and that the money goes to the Maritime Kray Administration without the involvement of any central organs. That is to say that all work is carried out directly, without any middlemen, under Japanese supervision.

[Voznesenskiy] Well, he who pays the piper calls the tune. Maritime Kray Governor Yevgeniy Nozdratenko said that he has secured Foreign Minister Andrey Kozyrev's support and that the construction of the first such installation, offered by the Japanese company

Nissho Iwai, at Bolshoy Kamen's "Zvezda" nuclear submarine repair plant is an entirely realistic proposition. Another installation of this kind is to be built at a Pacific Fleet nuclear waste storage facility. [170949] [video shows Kozyrev arriving, shore installations, Nozdratenko interview, "Zvezda" plant facilities]

Scientist Warns of Polluted Winter Cereal Crops

LD2503211694 Moscow Ostankino Television First Channel Network in Russian 1800 GMT 25 Mar 94

[From the "Novosti" newscast]

[Text] Academic (Sarkisov) of the Russian Academy of Agricultural Sciences today revealed a sensational report. It so happens that the grain left over since last autumn on many millions of hectares of land could damage people's health. As a result of an expert examination, it has been proved that corn, wheat, millet, and rye which remained in the fields over the winter have been polluted by nicotoxins [nikotoksiny] which lead to incurable illnesses if they get into the system of a human being or animal.

Maritime Administration on Terminated Nuclear Waste Dumping

LD2503180494 Moscow ITAR-TASS in English 1637 GMT 25 Mar 94

[By BUSINESS-TASS]

[Text] Moscow March 25 TASS—The Maritime Administration has put into question a possibility to implement the Russian summit statements on termination of liquid low-radioactive waste dumping in the Pacific Ocean, sources at the Department of Information and Public Relations of the Russian Ministry of Nuclear Power engineering told BUSINESS-TASS today.

Money for the maritime processing of this waste and utilization has not been allocated. Russia has a shortage of money and some projects, including ecological, are scarcely not financed. In early March an official representative of the Finance Ministry said the problem will be solved in the near future, but there have been no results.

The problem of utilization of water from Russian subs' nuclear reactors aggravated in mid-October. Some 900 cubic meters of liquid waste was dumped and some 700 cubic meters more were waiting for their turn. All this provoked a negative reaction of the international public, meanwhile the dumping was coordinated with the International Atomic Energy Agency and the competent Russian ministries.

Great Britain and France have the right to similar dumping till 2018, and Japan is also dumping its radioactive waste in the sea.

The problem of Russian radioactive waste utilization can be solved only by the construction of special decontaminating installations. Russia has not received the promised Western assistance, and a special tanker for waste storage offered by Japan appeared to be useless.

Defense Ministry Aide on Cost of CW Destruction Program

PM2503152394 Moscow KRASNAYA ZVEZDA in Russian 25 Mar 94 p 1

[Article by Vladimir Yermolin: "Chemical Weapons Must Be Destroyed. But It Is an Expensive Business"]

[Text] The parliamentary hearings in the State Duma Thursday [24 March] showed how complex the situation is in connection with Russia's international commitments in the sphere of the destruction of chemical weapons (CW). Defense Ministry spokesman Maj. Gen. Yuriy Tarasevich stressed that the military department expects the deputies to provide legislative support in such a difficult and expensive business as the destruction of chemical weapons. According to the military, the blueprint for CW destruction needs to be legislatively formalized. A draft blueprint will be presented to the State Duma in mid-April. We also need laws on CW destruction and on the social protection of the population in areas where these weapons are being destroyed.

Funding for all measures connected with preparations for the actual recovery of toxic substances and munitions is extremely uneven and inadequate. Getting rid of Russian chemical weapons will cost two trillion rubles [R] in 1993 prices. Meanwhile, some R10.4 billion are supposed to be allocated for this purpose in the current year. But we all know full well how funds are being allocated this year. The CW disarmament program is no exception.

There was a note of anxiety in what Maj. Gen. Yuriy Tarasevich said. A number of arsenals established back in the fifties in Udmurtia and Saratov Oblast are in need of a complete overhaul. In existing conditions such an overhaul is a very difficult and dangerous business. One would like this to be not an exclusively military headache. Let us hope the hearings go some way toward this.

The military-political aspects of Russia's joining the Convention on the Destruction of Chemical Weapons were also examined during the hearings. The inevitable question arose: Might it not happen that our country will abandon this type of weapon, while other countries, including those bordering on Russia, will remain "chemically" armed and, moreover, will reach a new level as a result of scientific developments? In general terms the Foreign Ministry and Defense Ministry spokesmen assured those present that in this case there are reliable control mechanisms in place and the world community provides certain guarantees. But the detailed reply to this question obviously had to wait until the hearings resumed behind closed doors.

We would point out that the Convention on Chemical Weapons was signed in Paris in 1993. So far it has been signed by 156 states. But it has been ratified by only four: Sweden, Mauritius, the Seychelles, and Fiji. Whether Russia is to become the fifth depends on how convincing the Foreign and Defense Ministries' pro-ratification arguments are in the eyes of the parliamentarians. All I would say is that, in the event of ratification, we will be able to count on financial assistance from Western countries and the United States.

Maritime Region Unauthorized To Allow Nuclear Waste Dumping

LD2503134194 Moscow INTERFAX in English
1220 GMT 25 Mar 94

[Text] The Maritime region's administration has no right to authorize the dumping of radioactive liquid into the Sea of Japan since only Russia's government is entitled to make such a decision. This was told to Interfax by Nikolay Shapovalenko, the head of the atomic supervision committee's department for overseeing radiation safety at defence facilities.

The Chairman of the Maritime Region's Committee for Natural Resources Evgeniy Stomatyuk announced in Vladivostok on Thursday that next week the local administration may adopt a decision on the dumping of radioactive waste because the Pacific Fleet's TNT-5 and TNT-27 waste storage vessels were in dangerous condition.

According to Shapovalenko, Russia abstained from signing an amendment to the International Convention on Waste Utilization, which completely prohibits the dumping of any radioactive waste.

"Thereby, Russia reserved the right to decide on radiation safety issues in handling waste as it finds fit for its national interests," Shaposhnikov said and stressed that "no local leader is authorized to allow the dumping of radioactive pollutants."

He reported that the government had approved a plan for putting a nuclear waste processing plant into operation within three months. However, he declined to say when the project would start to be implemented since the government had not decided who would fund it.

His organization believes that the Maritime Region's Governor Evgeniy Nazdratenko favors a Japanese waste processing facility and rejects for some reasons "the actually existing and effective blue-prints designed by various organizations in the Far East and elsewhere."

According to the nuclear supervision committee, the Japanese nuclear waste purification technology is far better than the Russian project. "If Japan's offer is accepted, an electric station will have to be build next to the waste processing plant," Shapovalenko said.

Meanwhile, as a senior Russian navy officer told Interfax the situation with the storage of radioactive contaminants in the Far East "is appalling and calls for urgent measures." "If the local environmental protection agency approves the regional administration's decision, theoretically I admit the possibility of nuclear waste dumping into the Sea of Japan," he said.

In his opinion, the local authorities "simply have to act in such a manner since the government fails to allocate any resources to solve the problem of storing radioactive pollutants."

Concern Grows Over Trainload of Toxic Waste

PM2503094594 Moscow ROSSIYSKAYA GAZETA
in Russian 24 Mar 94 First Edition p 3

[ITAR-TASS report: "What the Dumping of Toxic Substance Threatens?"]

[Text] The railcars containing industrial waste from France, the Netherlands, and Israel which have been halted for almost 50 days in the Orenburg area have "won" worldwide notoriety. The international environmental organization Greenpeace has drawn attention to the trainload of harmful, toxic substances and demanded that France remove the dangerous consignment from Russia.

What is the nub of the issue here? "The train comprising 16 cars carrying waste products arrived in Orsk for reprocessing at the Yuzhuralnikel combine, but the waste products turned out to contain high levels of harmful substances such as cadmium (up to 15 percent), thallium (2-3 percent), and arsenic. The train was sent further into the steppe—to the Buruktal combine, in Svetlinskiy Rayon. We do not have the techniques for detecting these toxic substances," Chief State Inspector Viktor Blinov, first deputy chairman of Orenburg Oblast's Environment Committee, said.

It is impossible to send the train back, as we have no address, he stressed, explaining: "As soon as the cargo crossed the border at St. Petersburg the consignor relinquished all responsibility. The customhouse at Astovo station let the train in. It clearly should be called to account. And it is strange that the certificate of quality for the raw materials was a week late in coming, by which time the train was already in Buruktal."

Viktor Blinov is worried: With the onset of spring the likelihood of the cadmium, thallium, and arsenic "escaping from the sacks into the environment" increases. He considers that "each sack must be placed in a separate metal container. This constitutes a lot of labor-intensive work requiring not just caution but also huge amounts of money."

Svetlinskiy Rayon administration chief Vasilii Yermenko has "evicted" the train from his territory. It has been moved in the direction of Orsk. The wagons are now halted in a railroad siding.

GEORGIA

Official Says \$10-15 Million Needed To Clean Coastline

AU2203204594 Tbilisi SVOBODNAYA GRUZIYA
in Russian 18 Mar 94 p 1

["BS-Press" report under rubric "According to Reports From Correspondents and Information Agencies": "\$320,000 on the Project for Protecting the Black Sea From Pollution"]

[Text] The international program for the protection and utilization of Black Sea resources under the aegis of the UN and the World Environmental Protection Fund is to finance projects aimed at fighting pollution in the Black Sea. The World Bank has allocated \$320,000 to elaborate an investment plan for cleaning the Poti and Batumi shorelines (the construction of new water and sewage works and the reconstruction of old ones and the liquidation of heaps of toxic waste that constitute a danger to the environment).

"The water treatment plants in the cities of Poti and Batumi are currently not in operation. The regions adjoining these towns are claiming the status of ecological disaster zones," stated Zurab Nogaideli, chairman of the Commission for the Protection of the Environment. According to Nogaideli, a minimum of \$10-15 million will be needed in order to implement the projects aimed at cleaning the Black Sea coastline in the regions of Batumi and Poti.

LITHUANIA

Restructuring of Environmental Protection System Viewed

94WN0201A Vilnius LIETUVOS RYTAS
in Lithuanian 18 Feb 94 p 4

[Article by Danius Lygis, counsellor of the Parliamentary Environmental Protection Committee: "How and Why the Administration of the Environmental Protection Should Be Restructured?"]

[Text] During the last decade not a single area of activity has experienced so many administrative restructurings as the protection of nature and then of the environment. There are various reasons why no room is being found for environmental protection. The main reason, in my opinion, is that environmental protection is being constantly confronted to economics and that is why it is compelled to "run from behind," to control and not to form the policies of the development of state economy.

Only three years have passed since the reorganization, and again there are plans to restructure the system of environmental protection. Discussions of the draft law "On the Elimination of the Department of Environmental Protection of the Republic of Lithuania and On the Founding of the Ministry of the Environmental

Protection and Natural Resources of the Republic of Lithuania" have begun in the Parliament.

This restructuring has both supporters and enemies. Some complain about haste, others about delay, and a third group is proposing new variants of restructuring. To form a more objective opinion, we should briefly survey the present condition of the management of environmental protection in Lithuania.

Following the restoration of Lithuania's independence in 1990, the environmentalists anticipated the dangers of the future reforms and proposed a new model of environmental protection (although they did not even agree among themselves which model of administration they should choose). A Department of Environmental Protection was established and it was subordinate only to the highest, i.e., law-making power. Yet such subordination was effective only up to the first obstacle. For instance, any attempt to correct the activity of the Department of Environmental Protection or to abolish disagreements between it and other departments or local administrations leads to a blind alley—to put this into effect, a parliamentary decision is necessary. But the Parliament already has plenty of work, and a lot of time goes by until such an organizational question is put on the Parliament's agenda, except in the case of ecological problems or conflicts on the national level that would make the Parliament react and take decisions without delay. If the Department of Environmental Protection would be part of the Government structure, a governmental or the Prime Minister's decision would be enough to take care of many conflicts. But the Parliament reserves the right to control the activity of any minister and to express lack of confidence in any minister.

The Department of Environmental Protection is not functionally connected with the Parliament and only formally reports to it once a year. The department exists next to the Government and the Parliament. Because of such gaps that were left in the model of administration, the institution becomes unmanageable, begins to live for itself, and the department loses the direct practical links. In the governmental sessions, the department's leaders are limited to a mere deliberative vote. Therefore it happens that the governmental structures ignore the department's directives. In such cases, it is again necessary to turn to the Parliament...

The essential shortcoming of this administrative model is that it does not allow for a simultaneous solution of economic and ecological problems, as it would be appropriate, but separates them artificially. In fact, the Department of Environmental Protection is limited to only a formal participation when the Government prepares the strategic programs of the reconstruction of economy, energetics, transport, agriculture, and others. The department creates its own programs for the protection of the environment separately from the Government. They are not being coordinated, and the result is an ineffective use of energy and a waste of funds.

Of course, the transformation of the department into a ministry will not do anything good if the Government itself will not slowly renounce economic functions and will not strive to integrate management by issuing new ministry regulations. There will be little change, if the internal structure of the future ministry will be formed by disregarding the principle of the delimitation of functions, responsibility and accountability.

During the discussions on the territorial administrative reform, which took place in the Parliament at the beginning of this year, the Prime Minister surveyed the future of the state management and remarked that the Government is ready to pass the economic functions to the local administrations. If this is really the case, then the issue of property and other economic questions would not impede the Government's execution of state policy and the adoption of impartial decisions related to the protection of the environment and the use of natural resources.

It is already clear that it is inexpedient to separate control from the other functions of the future ministry. If the Ministry of the Protection of the Environment has no right of control, then it, in the words of V. Adamkus, is a "toothless granny." Should two institutions be created that control the same area? Somebody may gain from that, but it will not be Lithuania's nature.

UKRAINE

Environment Ministry Seen in Need of Major Reform

94WN0212A Kiev *VECHIRNIY KYIV* in Ukrainian
8 Feb 94 p 2

[Article by Valentyn Smaga, news editor: "Bureaucratic Feast During Environmental Famine, or, Melancholy Reflections on the Fact That the Ukraine Environment Ministry Should Not Be Reshuffled Again"]

[Text] Hot facts

I confess. In over 20 years of work in the Ukrainian press I have often caught myself being prejudiced against some agencies and organizations. Except for one, which I have served faithfully for a number of years. Not the office itself, of course, but its underlying idea, which, unless fully implemented, would make life in Ukraine impossible.

This organization used to be called the UkSSR State Environmental Committee; now its title is the Ministry for the Protection of the Environment of Ukraine. But I would like to call it the Ministry of Survival, because unfortunately the direst forecasts are coming true. On the population growth chart of Ukraine, the curves measuring live births and deaths came together in 1990 at a very tragic point, at which our nation has begun to die out physically.

I found that chart in the National Report on the State of the Environment in Ukraine, which, in accordance to the

law, the ministry must submit annually to the Supreme Council. I will discuss these reports—there have already been two of them, for 1992 and 1993—below. Now, let us cite the axiom: the environmental crisis is global in character and it can be resolved only by mankind in its entirety and, on the state level, by the authorities at the highest level. In other words, our chances for survival depend on the level of authority of the country's highest environmental protection entity.

What kind of organization was the UkSSR State Environmental Committee is painful to recall. Officials in oblast and rayon committees, hired for minuscule wages, had one responsibility only: to rubber-stamp decisions harmful to the environment issued by higher authorities. I have been friends with many of them and understand very well how difficult it is to oppose bureaucratic demands. One must have tremendous courage to defend from a hare-brained project a national landmark, the Khortytsya island in Zaporozhye oblast, for example, or to fight the Danube-Dniepr canal, or to oppose the construction of the Crimea nuclear power station.

For articles on this issue, written with the help of my trusted assistants from the State Environment Committee, I won a number of top awards of the late USSR. Then, the empire began to crumble. Before its collapse, the command-administrative system of the Union tried making cosmetic changes when it issued the resolution "On Fundamental Restructuring of Environmental Protection in the Country," which caused a major bout of musical chairs to be played at environment protection agencies. The Committee was changed into a ministry, but the power over our land remained in the hands of monopolies. That was the full extent of the achievement.

Later, at the time of the so-called perestroika, on the wave of popular outrage over the Chernobyl disaster, a powerful environmental protection movement emerged in the country. I was one of the founders of the Green World. I left it because politics started to grow in influence there. I believe that it is a deadly sin to make a career out of a severe national ecological disaster, and that the public must concentrate all its efforts on creating a powerful state environmental protection agency that would be equal to, for example, the Prosecutor General. Unfortunately, careers are being made but the cause does not advance.

Then came the sacred light of independence, and a generally progressive law "On the Protection of the Environment" which for the first time in our history established a system of ecological security for the people. Serious, calm and responsible people were placed at the head of the ministry and old painful problems began to be addressed.

And what now? Nothing. An adequate environmental protection system, which barely began to be formed in the country, has been dealt a typical, and I fear mortal, blow. And it was done cleanly. Based on the presidential decree on government service, the ministry is being cut

by 30 percent, apparently along definite lines. The attestation process is already underway; then there will be a reshuffle of agency personnel, wasting valuable expertise gained by experienced employees.

I agree that many existing ministries can be easily cut back by as much as 50 percent. But the Ministry of Survival should have its staff tripled, and its authority considerably extended. Everyone who attentively follows current processes in Ukraine will notice that every stupid action by the authorities is extremely rational from the point of view of the private interests of its authors. Take just two of Ukraine Cabinet of Ministers resolutions, No. 18, dated 13 January 1992, and No. 373, dated 7 July 1992. They effectively destroyed the painstakingly built system of fines for polluting the environment. It turns out, then, that a powerful environmental ministry with real economic power and influence is not needed? It is a rhetorical question. The answer is obvious. For a good 10 years, I have been repeating in the press that a state environmental protection agency can only be effective if its independence from executive power is fully guaranteed. As that of the parliament, the prosecutor and the press is in all civilized states. This is one of the main conditions for the survival of the people and, hence, the country.

Perhaps we should not frighten the readers with the comprehensive picture of the destruction of nature contained in the National Report on the State of the Environment in Ukraine for the last two years, which the Environment Ministry sent to the country's parliament. Our chamber of representatives, having suspended the moratorium on the construction of nuclear power stations, has, in my opinion, clearly demonstrated its true attitude on this major problem in the life of the people.

The report is a major effort by a large group of specialists. Last year's document is distinguished by greater depth and a broader conception compared to the one drafted in 1992. It not only presents data on the condition of the ground, the water and the air and on the impact of pollution, including radioactive pollution, on the health of the population, but also proposes a program for what in my opinion is the most important issue: environmental protection reform in Ukraine.

This reform will be comprised of three stages. The first will consist, primarily, of establishing an effective environmental protection system of ecological security and of drafting a number of legislative acts to ensure it. The second stage will be to develop and implement comprehensive programs to solve priority problems to balance the level of environmental pollution with nature's ability to regenerate itself. Finally, the third stage will be to build a system of managing environmental resources and regulating the technological impact on them at a level where the resolution of such problems would become the foundation for steady development of society.

We have conquered nature. Now, thank God, we have realized that we have been stupidly fighting our own

mother and will survive only if we make peace with her and subjugate the life of society to this peace.

Perhaps we should not recount journalistically this enormous analytical work. But the final chapter of the National Report for 1993 contains the following recommendation for this year: "Due to the uncertainty of changes taking place in the Ukrainian economy, it is important to ensure qualitative and quantitative changes to improve the environmental situation in Ukraine."

This is how we live. The environment is hostage to the economy. The latter, in turn, is fully dependent on politics. But will the future Ukrainian parliament be willing to heed the dire warnings contained in the National Report? Meanwhile, the bureaucratic feast during the environmental famine which is taking place today is certain to curb the fighting spirit of the Environment Ministry further. This is why I do not hide the aim of my article: supporters of environmental protection must make themselves heard and to try to stop cuts which so resemble a slaughter.

Cabinet Bans Hazardous, Toxic Imports

*WS2203111594 Kiev UKRINFORM in English
1836 GMT 21 Mar 94*

[From the "Business News Weekly" feature No 12, 14-20 Mar 94]

[Text] On April 1, 1994 the Cabinet's resolution becomes effective, which was approved on February 22 and specifies procedures for bringing to Ukraine or transferring across its territory wastes and secondary raw materials, as well as sets a list of materials banned from importation into Ukraine as hazardous or toxic.

The resolution also defines procedures for license issuance to transfer such materials across Ukraine's territory.

The resolution specifies that both bringing to Ukraine and transit of such materials without permits from the Ministry for natural environment protection are forbidden.

Commenting on the resolution at Ukrinform's request Ukraine's Minister for natural environment protection Yuriy Kostenko noted that the document was an element of a comprehensive package of documents, which the Ministry and other relevant departments were drafting in order to adjust Ukraine's legislation to accepted international norms and standards.

The List of groups of substances and materials, which belong to the category of hazardous wastes and are banned from importation into Ukraine, was drafted based on lists, which are contained in the documents of the Basel Convention of 1989 "On Control over Transborder Transfer of Hazardous Wastes and Their Disposal".

On March 21 through 25 Geneva is supposed to host a meeting of the parties to the Basel Convention to discuss, in particular, the Convention's ratification procedural issues and their accedence to it. The Ukrainian Ministry's delegation is also to attend the meeting.

Yevgeniy Motorin, chief of the Ministry's ecological safety agency, singled out the following major legal safeguards, which the resolution contains:

- the amount of wastes should correspond to the designated enterprise's reprocessing capacity;
- the contract should specify that in case of importation of substandard raw materials and wastes to be reprocessed in Ukraine, the importer is bound to take them out of Ukraine at his expense;
- the custom-house is responsible for exercising due control over transborder carriage of wastes, in accordance with the active legislation.

Besides, the Law of Ukraine of February 25, 1994 complements the Criminal Code of Ukraine with an article, which specifies that importation of banned materials into Ukraine is actionable and entails punishment up to three years of imprisonment. Importation into or transit across Ukraine's territory of wastes and secondary raw materials without due permits entails fines in amounts of 150 minimal wages.

As Ye. Motorin thinks, the state's support for environmental safety is inadequate. There are only three garbage incineration facilities in Ukraine.

The state budget provides for 1.638 trillion karbovanets allocated for natural environment protection. Factual allocation, though, is barely enough to support the Ministry for natural environment protection alone.

The List of Substance and Material Groups, Which Belong to the Category of Hazardous Wastes and Which Are Banned From Being Brought to Ukraine

1. Medical wastes from hospitals, polyclinics and clinics.
2. Wastes from live-stock farms' laboratories.
3. Wastes of yeast and alcohol production.
4. Wastes of tobacco production.
5. Wastes of fish processing.
6. Wastes from slaughter-houses and packing-houses.
7. Residue of industrial and other sewage.
8. Sewage from livestock-raising farms.
9. Biologically infectious wastes containing pathogenic bacteria and viruses, or wastes, which may cause infections.

10. Biological substances resultant from research experiments, which have not been identified, or new ones with unknown effects on environment.

11. Unprocessed hide wastes.

12. Perishable foods, which are either damaged or with their dates' expired.

13. Pharmaceutical industrial wastes.

14. Pharmaceutical products and raw materials, which are either banned or damaged or with their dates' expired.

15. Wastes, which contain alkaloids or glycosides and which may affect nervous system.

16. Wastes, which can be used for narcotic drug manufacture.

17. Used phytosanitary substances' packaging materials.

18. Forbidden for use, damaged or with expired dates cosmetics.

19. Wastes from production or application of biocides and phytopharmaceutical preparations containing pesticides.

20. Banned from application, damaged or expired biocides and phytopharmaceutical preparations containing pesticides.

21. Wastes from production or application of food conservation agents.

22. Wastes from chemical treatment of timber.

23. Wood conservation agents, which are forbidden for application, damaged or with dates expired.

24. Wastes of oil (mineral, food, synthetic oils).

25. Residue from clearing of petroleum containers.

26. Oils or emulsions with water-soluble cooling agent content.

27. Oils containing saw-dust, fabric detergents, diatomite.

28. Lubricant and oil containers, except working containers.

29. Silts containing petroleum or other hazardous chemicals.

30. Agricultural chemicals, which are forbidden for application, damaged or with their dates expired.

31. Wastes from production or application of dyes, paints, inks, lacquers, pigments.

32. Dyes, paints, inks, lacquers, pigments, which are forbidden for application, damaged or with their dates expired.

33. Wastes from production or application of resins, latex, plasticizers, glues.
34. Resins, latex, plasticizers and glues, which are forbidden for application, damaged or with their dates expired.
35. Wastes from production or application of petrochemical materials, except processed films containing silver.
36. Photochemical materials, which are forbidden for application, damaged or with their dates expired.
37. Chemicals, which are forbidden for application, damaged or with their dates expired.
38. Used chemicals' packaging materials.
39. Wastes of chemical substances derived in research experiments, which have not been identified or which are new ones with unknown effects on environment.
40. Wastes containing aniline or its derivatives.
41. Wastes containing allyl alcohol or its derivatives.
42. Wastes containing nitrites.
43. Wastes containing readily soluble sulfides or carbosulfides.
44. Wastes containing ethers.
45. Wastes containing phenols, chlorophenol included.
46. Wastes containing formaldehyde.
47. Wastes containing mono-, di- and tri-ethylen glycols.
48. Wastes containing nitroaromatic compounds.
49. Wastes containing mono-, di-, n- replaced ring heteroaromatic compounds.
50. Wastes from production or application of organic solvents.
51. Wastes containing bromic or organic bromic compounds.
52. Wastes containing freons.
53. Wastes containing polychlorinated dibenzofurans or their compounds.
54. Wastes containing polychlorinated biphenyls, terpenes or polybrominated biphenyls.
55. Wastes containing dioxins or their compounds.
56. Wastes containing chlororganic substances.
57. *Wastes from metallic surfaces including salts and cooling agents.
58. Neutralized galvanic residues and etching residues.
59. Used oil and air filters.
60. Used catalysts.
61. Used or expired electric cells.
62. Wastes containing selenium or its compounds.
63. Wastes containing arsenic or its compounds.
64. Wastes containing barium or its compounds (except barium sulphate).
65. Wastes containing beryllium or its compounds.
66. Wastes containing chromium compounds.
67. Wastes containing zinc compounds (except zinc oxide).
68. Wastes containing cadmium compounds.
69. **Wastes containing lead or its compounds.
70. Wastes containing copper compounds.
71. Wastes containing alkali metals.
72. Wastes containing mercury or its compounds.
73. Wastes containing strontium compounds.
74. Wastes containing thallium or its compounds.
75. Wastes containing tellurium or its compounds.
76. ***Wastes containing vanadium or its compounds.
77. Wastes containing carbonyls of metals.
78. Wastes containing metallic-organic compounds.
79. Wastes containing cyanides (both organic and non-organic), halogenocyanide compounds, derivatives of organic cyanic acids, and compounds, which may release in hydrolysis of cyanide ions.
80. Wastes containing phosphoric compounds (both organic and non-organic) including phosphides of metals.
81. Wastes formed during plastic surface treatment.
82. Wastes formed during neutralization of glass etching fluxes.
83. Wastes containing fluorine compounds.
84. Alkali silts.
85. Tar-type waste of pyrolytic treatment.
86. Post-ignition oil fuel residues.
87. Residues after boiler cleaning.
88. Caustification residues.
89. Residues containing hexivalent chromium.
90. Wastes containing asbestos.

91. Post-ignition waste residues.
92. Other residues of industrial waste treatment.
93. High-acidic wastes (pH under 3).
94. High-alkali wastes (pH over 12).
95. Waste, which can emit choking or tear gases or aerosols.
96. Explosive wastes or such with components which may cause an explosion.
97. Wastes, which can emit explosive gases or aerosols.
98. Wastes, which are potentially dangerous, when in contact with air or water (causing explosions or fires).
99. Wastes, which are readily oxidizable.
100. Radioactive wastes.

*Except chips polluted with oils.

** Except chips of lead or its alloys, chips of cable, used or substandard articles made of lead.

*** Except used steel articles or other scrap containing vanadium.

Environment Ministry To Cooperate With U.S., Holland

*WS2403182194 Kiev VECHIRNIY KYIV
in Ukrainian 22 Mar 94 p 3*

[Report by Fayina Zlotnyk: "We Will Get \$6 Million More"]

[Text] The Ukrainian Environmental Protection Ministry press center reported that Yuriy Kostenko, minister

for protection of Ukrainian environment, returned from an official trip to the Netherlands and the United States.

During his stay in the Netherlands, a memorandum was signed on ecologic cooperation between the Ukrainian Ministry of Environmental Protection, and the Ministry of Construction, Territorial Planning and Environment, the Ministry of Transportation, Public Works and Water Management, and the Ministry of Agriculture, Fishing and Nature of the Netherlands.

This memorandum provides for cooperation in the sphere of ecologic management and the protection of air, water, and wildlife. It was agreed that a working cooperation program for 1994-95 will be approved in early April.

In the United States, where Yuriy Kostenko was invited to visit the U.S. Environmental Protection Agency, he met with officials from this agency, the World Bank, the Agency for International Development, the Department of Energy, and the U.S. Congress.

The U.S. officials displayed a deep interest in cooperation between Ukraine and the United States in the sphere of ecology, and examined a package of proposals about urgent environmental protection measures, such as the creation of modern laboratories monitoring radiation levels and water quality, recycling of toxic waste, launching educational television programs, and finally establishing an informational and educational center. The American side is planning to allocate \$6 million to implement the above projects. This will be an addition to the \$500,000 that the World Bank granted the Environmental Ministry last year to carry out a project called "Preservation of Biological Diversity of Carpathians." The American colleagues are ready to continue to share with us their experience and technologies, and want to train our specialists and provide financial assistance.

REGIONAL AFFAIRS

Flexibility Allowed in Environmental Approaches

94WN0182B Duesseldorf VDI NACHRICHTEN
in German No 3, 21 Jan 94 p 3

[Text] Only "as much Community as necessary."

Environmental protection in the European Community has long meant a search for the smallest common denominator. The Maastricht Treaty has introduced a change of course: the individual countries are no longer tied to minimum standards.

European environmental policy has always been an enigmatic discipline. Usually only lawyers, administrative specialists and confirmed Eurocrats could find their way in the confusion of guidelines, regulations, deadlines and exceptions. Nearly always, however, the simple rubric "Environmental policy [based] on the smallest common denominator" went to the heart of the matter.

The Maastricht Treaty rewrote this formula. In future decisions the vote of the majority will count, unanimity among member countries is no longer necessary. Second, the treaty strengthens the jurisdiction of the European Parliament. For example, in the future a new guideline on waste policy will no longer merely have to be noted by the EP but will require the approval of the Parliament.

This can easily lead to confusion as the discussion on the long-planned guideline on packaging and packaging waste shows. In December of last year the Council of Ministers on the Environment reached an agreement on collection and disposal quotas which are lower than the German quotas taken from the packaging regulations. "First rate stupidity," Heinrich von Lersner, President of the Federal Office of the Environment in Berlin, says angrily whenever the subject comes up. Should the collection-happy Germans just throw away more trash again? No, since a compromise reached shortly before Christmas provides that the—relatively low—EU quotas may be exceeded throughout at the national level.

This does not yet, however, bring the matter of the EU packaging guidelines to a close. "It is certainly possible," Dr. Jan C. Bongaerts, Director of the Institute for European Environmental Policy in Bonn, suggests, "that the European Parliament will not agree to this compromise." The consequence: the negotiations would have to begin again from scratch.

Is Brussels more progressive than Bonn? Or are the Germans more environmentally conscientious than the rest of the EU? There have always been discussions about these questions. Gudrun Lammers, EU representative from the environmental group Greenpeace, laments a "clear democracy deficit" in the environmental policy from Brussels. "Naturally, much remained behind German standards," agrees the SPD [Social Democratic Party of Germany] Europe delegate Klaus Haensch. His colleague Dagmar Roth-Behrendt suggests

on the contrary that "70% solutions are still better than if several countries were to do nothing at all."

Dagmar Roth-Behrendt chips away at the image of the Germans who all too gladly see themselves as the paragons of environmental protection. "Instead, the European Union accelerated German legislation on environmental protection," she made clear at an SPD function last week in Berlin. Even more: Germany, too, has already had to suffer defeats before the European Court; for example, for the tardy implementation of the guidelines on environmental compatibility testing as well as on drinking and ground water protection.

Brussels environmental policy may possibly become more effective from the change in the trend. However, SPD Bundestag, or Federal Parliament, member Liesel Hartenstein notices in Brussels a "clear tendency toward a weakening of environmental standards." As one piece of evidence she mentions the drinking water guidelines, which would again make higher nitrate values permissible in Germany in the future. Also, the herbicide atrazine, which is forbidden here, could theoretically once again be available on the market in Germany. Additionally, Great Britain wants to make the mixed dumping of household trash and industrial waste possible with a guideline on waste dumping. And France is petitioning before the European Court against the prohibition currently in force in Germany banning pentachlorophenol (PCP), an active ingredient in wood preservatives.

No one can say whether European environmental policy will become more lucid. In any case, in the future the European Union will in many cases only provide the outline [of a policy] which the member countries will then fill in. In this way the individual countries will be permitted greater flexibility. There is already a great deal of concern from the Germans that the rubric "as much Community as necessary, as much independence as possible" is more likely to cement distortions in competition in the EU than to tear them down.

This discussion can be best followed at the current time from the planned guideline for the Integrated Avoidance and Reduction of Environmental Pollution (IPC). The guideline establishes standards for the approval of industrial facilities. [By following the standards], it shall thus be determined which environmental option is best at any given time in an individual case. This [approach] provides flexibility in two respects: since the totality of the environmental effects of a facility are taken into account, a disproportionately low level of air pollution, for example, can balance out higher levels of toxins in waste water or large amounts of waste materials.

In addition, the preexisting level of pollution in a region is taken into consideration. In the case of lower initial pollution with maintenance of specified emission limits, there may in individual cases be a deviation downward from the state of the art [in pollution control policy].



How much recycling do we need? In the battle over determination of European-wide collection and disposal quotas for packaging waste, there are two victors: the EU with relatively low quotas in the planned guidelines; and the Germans, who may collect and recycle more packaging in excess of [the guidelines]. *Photo: Diagonal/Gerald Sagorski*

Key: Left to right, top row: cans; plastic; aluminum. Left to right, bottom row: milk containers; plastic.

The environmental policy makers in Bonn have difficulty with this new thinking. "There are no standards for comparison and no standard values for various environmental mediums," objects Kurt Schaefer, Director of the Emission Protection section in the Federal Ministry of the Environment. Bonn, therefore, has absolutely no intention of approving the IPC guidelines as they are currently formulated.

Another reason for German opposition lies in the planned change in the practice of granting approvals. The guideline will in general streamline the approval procedure for [industrial] facilities: in the so-called spoke system, a single authority shall have overall control of granting the authorization. That means that individual approval [processes] conforming to various laws would be combined together.

That would be a fundamental departure from the German practice of granting authorizations. Until now several specialized authorities would decide on an approval—this basic tenet would be invalidated by the IPC guideline. And thinking does not yet extend this far into European dimensions. As Schaefer says: "The integrated concept is not compatible with the German system and is therefore difficult to implement."

GERMANY

BMFT Funds Program for Nonpolluting Manufacturing Processes

BR2303103394 Bonn *TECHNOLOGIE-NACHRICHTEN*
MANAGEMENT-INFORMATIONEN in German
12 Feb 94 pp 4-5

[Text] In the past, progress in environmental protection was achieved overwhelmingly by applying technological

measures downstream, as in the case of filter, washing, and sorption systems for dedusting and exhaust gas cleaning, clarification methods for treating effluent, and biological, chemical, and thermal plants for treating waste. Successful though the use of these downstream treatment methods may be, the future of environmental engineering lies in preventive measures that avoid the occurrence of pollution from the outset. The new "Production-Integrated Environment Protection" funding program will support the development of industrial production methods that contribute to the avoidance of pollution at source, to the cyclic economy, and to resource conservation.

The development and introduction of new production processes entails considerable expense and risk because radical changes in the production process are required without detriment to the quality of the end product. This is why industry is slow to adopt preventive technologies. Remedial measures still account for about 80 percent of environmental protection investment. However, it must be borne in mind that those who avoid environmental pollution today by adopting integrated environment protection technology, conserve resources by closing circuits, and recycle products that have outlived their usefulness will save on the expense of pollution disposal tomorrow. A whole series of pioneering solutions already available shows that ecological issues can be fully reconciled with economic considerations.

Firms in the new federal laender have special opportunities for converting industrial production methods to take account of the environment, as the technologies of the future should be installed there from the outset to replace obsolete technologies and defunct markets. The process of building up new production capacities should take account of the principles of production-integrated

environment protection for economic and ecological reasons, as this is where the decisive market advantages will lie in the long term.

The "Production-Integrated Environment Protection" funding program is primarily directed at processes and products involving low-degradability or nondegradable substances or blends of substances. It seeks an integrated approach taking in the whole production process from raw material extraction to the treatment of unavoidable residues:

- Environment- and resource-conserving extraction of raw materials from the biosphere;
- Environment-friendly, low-waste and emission production processes achieved by replacing polluting raw and process materials, modifying the process technology, and closing the entire process circuit;
- Maximum recycling of production residues and reuse in other production processes (networking of production processes);
- Environment-compatible product design making for environment-friendly use, maintenance, and recycling or reprocessing, and
- Return to the biosphere of residues that cannot be recycled in an environment-compatible form achievable by pretreatment.

Production process conversion will be backed up by ecobalances and product line analyses. The systematic closing of material circuits is expected to bring economic advantages as well. Product-integrated environment protection thus means the conservation of both economic and ecological resources.

An annual appropriation of about 25 million German marks will be available for the implementation of the "Production-Integrated Environment Protection" funding program during the initial phase. A substantial increase in funding for this increasingly important area of environment protection research is expected in subsequent years.

Problem of CFC Disposal Still Not Solved

94WN0183A Luesseldorf VDI NACHRICHTEN
in German No 6, 11 Feb 94 p 19

[Article by C. Friedl]

[Text]

Numerous products emit ozone killer

International agreements to eliminate the production and use of ozone-depleting materials suggest that the CFC problem is as good as solved. That appearance is deceiving. Neither recycling nor destruction is regulated for the approximately 2.1 million metric tons of CFCs

and halons now in use throughout the world. The first disposal plant will start operation in Germany this summer.

The Federal Republic of Germany will have completed its retirement of CFCs as the first nation in the world during 1994. "CFCs should be retired on a Europe-wide basis by 1997." "Countries that signed the Montreal Protocol want to advance the timetable for this retirement."

This and similar pronouncements provide the impression that the international efforts to find a common solution to the CFC problem are bearing fruit. Chlorofluorocarbons and halons threaten the stratospheric ozone layer. The danger they pose appears to have been eliminated by the Montreal Protocol of 1987 and the more stringent retirement scenarios and step-by-step plans enacted in subsequent years.

"This impression is wrong," contradicts Vivian Sheridan. She is the environmental spokesperson of the American chemical company DuPont. This company was formerly the world's largest producer of CFCs. Upon close inspection, the Montreal Protocol merely regulates the production volume of new CFCs in the signatory countries. On the other hand, it permits the import, export, and even after 1995, the use of recycled CFCs. Developing countries may manufacture CFCs "for their own use." Finally, the production and sale of new product is possible to the end of the year.

On the other hand, the Montreal Protocol does not regulate the whereabouts of the quantities already produced, stored, and in use. These quantities are considerable. Throughout the world, UN estimates point to about 2 million metric tons of fully halogenated CFCs and 115,000 metric tons of halons that are in use and on the market. For Germany, the UN cites 80,000 metric tons of CFCs used as propellant in rigid expanded polyurethanes, 25,000 metric tons as refrigerant in cooling and refrigerating plants, and 9,000 tons of halons in fire extinguishing systems. In addition, some few 100 metric tons more are used in Germany annually as solvents.

Additional CFCs are released from these sources into the environment. Some of them are legal. Solvents enter the atmosphere within a few months of their application. The same applies to spray cans—where CFCs, for example, are still permitted in medical sprays. The insulating gases from insulating foams diffuse partially over the course of years into the environment. In recycling refrigerators, almost every second unit is disassembled manually at this time. Thomas Engmann is the manager of Electrorecycling at the disposal company of Rethmann, Selm. In his estimation, "About 30% of the CFCs enter the atmosphere uncontrolled." Substantial CFC sources are also German landfills. According to a study by the Technical University of Hamburg-Harburg, 200 metric tons of CFCs escape annually from spray cans, plastics and refrigerators in landfills. Up to 40,000

metric tons of the gases are still stored in West German dumps, according to estimates.

In practice, the retreat of CFCs is in no way as orderly or at the speed proclaimed by political pronouncements. "CFCs are the hazardous waste that can be disposed of most easily," explains Dr. Holger Brackemann from the Federal Office of the Environment in Berlin. In other words, opening a valve in an unobserved moment is enough to "dispose of" the materials. This illegal path is taken often, particularly for fire extinguishers and extinguishing systems, suspects Brackemann. According to the CFC Halon Ban, all fire extinguishers and extinguishing systems filled with halon were to have been taken out of operation by 31 December 1993 and the material disposed of by way of the Associations. Of the 6000 metric tons still estimated in existing systems in 1992, "only considerably less than 1000 metric tons have been recovered" by today according to Brackemann.

The temperatures in a conventional trash incineration plant are sufficient to crack the CFC propellant R 11. This was shown by experiments in the Tamara test plant of the Nuclear Research Center at Karlsruhe.

If you need CFCs, you can still get them. "The market for secondary product is large and unmanageable," assesses Dr. Peter Schubert. He is a CFC expert for DuPont. In his opinion, a considerable quantity of the ozone killer is still stored by vendors. The conversion of equipment to alternatives is proceeding at a slow pace. "For example, most users of cooling units or air conditioners choose to use recycled CFCs rather than convert to alternatives," says Schubert. The development of environmentally compatible alternatives and the manufacture of these products, costing millions, have not yet become profitable for the chemical industry. The demand is moderate.

Correspondingly hesitant is the retreat of old CFCs. Schubert estimates that, at this time, around 100 metric tons of refrigerant are purified on site and then refilled annually. An additional 300 metric tons are processed into secondary product. About 700 metric tons arrived at Hoechst AG in Frankfurt for processing in the last year.

Product that is too dirty for redistillation had to be stored until now because destruction capacity was not available. Probably starting this summer, Germany will have its first disposal system available. "The approval has just arrived," says the system developer Dr. Siegmund Hug. Three cracking reactors—originally constructed for purifying exhaust gas from CFC production at Hoechst—are to eliminate 9000 metric tons of CFCs annually when completed.

In this process, the molecules are split in a graphite reactor at 2200 °C to 2500 °C in a hydrogen/oxygen flame. The reaction products—essentially hydrochloric acid, hydrofluoric acid, and carbon dioxide—can be separated from one another in a second step and reused as chemical raw material. "Our system will then be

available to all Europe," says Hug. American and Japanese companies have shown interest in obtaining a license, according to Hug.

Besides this, several other methods are undergoing experimentation. Engineers at Maschinen- und Apparatebau Grimma tested plasma cracking a few years ago. Concentric Machines (CM) in Treutlingen has developed the Chemical Reverser that obtains reusable cracking products from CFCs and halons. The American company Process Technologies of Boise Idaho splits the molecules at less than 50 °C using UV radiation. A method of the Tokyo Electric Power and KRI International Inc. of Kyoto is based on the same principle. A mixture of 80% CFCs and 20% oxygen is exposed to a mercury-vapor lamp. UV radiation cracks the CFCs into chlorine gas which is filtered out of the process flow by way of a membrane.

The Industrial Research Institute of Kanagawa Prefecture is rolling out particularly big guns. CFCs, fuel gas, and air are mixed and made to explode in a steel pipe 1 meter in length and 35 mm in diameter. During this process, temperatures of almost 3000 °C are created. Such temperatures, in addition to strong pressure waves, split up to 99.99% of the molecules.

Regarding the possibilities for destroying CFCs and halons, the experts of a working group in the UN Environmental Program (UNEP), the "Technical Advisory Committee (TAC) on the destruction technologies for ozone-depleting substances," have been racking their brains since 1991. TAC has investigated several dozen possible methods and come to this conclusion. "The only methods available now are based on thermal oxidation." The American Environmental Protection Agency (EPA) had a similar summary. "Incineration is at this time the only large-scale usable technology for destroying CFCs."

Even conventional incineration plants are suitable for CFC destruction. Tests at the "Tamara" incineration plant of the Nuclear Research Center at Karlsruhe (KfK) show that the propellant R-11 from insulating foams is cracked. However, the CFC proportion at the input must always remain limited to a few per cent of the trash because aggressive hydrochloric and hydrofluoric acids are created during incineration.

The development of disposal methods got a late start. The experts agree on this. "In addition," says Brackemann, "More commitment on the part of the chemical industry would have been desirable." One thing is clear. Until adequate disposal capacities are available worldwide, most of the existing CFCs have, either intentionally or not, literally disappeared into thin air. The DuPont expert Schubert can see a positive side to this despite the problems. "Then, we can use the methods to dispose of the CFC alternatives."

Biological Degradation of Mercury Described

94WN0182A Duesseldorf VDI NACHRICHTEN
in German No 4, 28 Jan 94 p 17

[Text][Text above title]Bacteria Convert Heavy Metal
With Special Enzyme.

[Text below title]For Seep Waters and the Electrotechnical Industry—by Joerg Brandes.

Many microorganisms feed off substances which are poisonous to humans. Scientists from the Society for Biotechnical Research (GBF) in Braunschweig have discovered that bacteria can be used to clean up water contaminated with mercury.

Mercury gets into the environment from burning trash, industrial waste waters and the sewage system, but also from volcanic eruptions. Since heavy metals are not biologically degradable, they can gradually build up in the food chain and become, finally, a danger to humans and animals. Today there a variety of technological processes available for "fishing out" poisonous heavy metals out of waste water. New in the selection are biological processes in which the heavy metal is taken up by the organisms into their biomass.

In looking for possible microbes the GBF scientists in Braunschweig soon struck it lucky. They correctly assumed that mercury-resistant microorganisms would have to be found near sources where a lot of the heavy metal accumulated. Among these, for instance, would be waste waters from the electrotechnical industry or from seed protectant or fungicide plants.

Basically, however, mercury is as harmful to bacteria as it is to other living organisms. Microbes which take up very much of it must therefore at least be able to transform it into a biologically "tolerable" form. With the help of a special enzyme, mercury reductase, the bacteria convert the mercury into a metallic form which is much less toxic. More than twenty naturally occurring bacterial strains have since become known which possess this enzyme.

Tests are carried out in so-called fixed-bed reactors in which microorganisms are colonized on a medium. The contaminated water is passed over the [bacteria] and loses the greater part of its toxic cargo in the process. The filtered-out metallic mercury is precipitated out in the form of small pellets in the reactor. After completion of the process the bacteria are removed and the remaining heavy metal is distilled off. The medium can then be reused.

Since the enzymatic transformation of the heavy metal occurs in a very directed way and is practically non-reversible, it is particularly well suited to the treatment of waste waters with a mercury concentration of less than 5 mg per liter. Prof. Wolf-Dieter Deckwer, head of bioengineering at GBF, considers seep water from trash

dumps, for example, to be suitable, as well as seed treatment operations where mercury compounds are heavily used.

To widen their scope of application, microbiologists are giving their bacteria a little boost genetically. They have succeeded in joining in one strain of *Pseudomonas putida* two characteristics which do not occur together in nature: the microbes can split particularly toxic organic mercury compounds as well as convert the resultant—and still toxic—cations of the element.

Process for Recycling Computer Parts Described

94WN0205B Duesseldorf VDI NACHRICHTEN
in German No 8, 25 Feb 94 p 22

[Article by Birgitt Riese: "Electronic Scrap Travels Many Routes To Disassembly"; Subhead: "Waste Managers Have Market Divvied Up"]

[Text] Duesseldorf, 25 February 1994—Recycling of electric and electronic scrap material is off and running. Numerous firms have discovered for themselves the lucrative waste disposal market—even absent an electronic-scrap ordinance. The loops, however, are far from closed for all materials.

On 1 January 1994, the "ordinance on the avoidance, reduction and recycling of waste materials from used electric and electronic equipment" was supposed to take effect. The result has been zilch since the federal environmental ministry and industry associations were unable to reach agreement, particularly on the issue of financing.

According to estimates by BC Berlin Consult GmbH, a 1.8 million ton amount of electronic scrap per year is expected beginning with 1994, and as of 1998 it will even reach 2.4 million tons. According to the Central Association of Electrical Engineering and Electrical Industry [ZVEI] in Frankfurt, capital goods account for 40 percent of that and consumer goods for 60 percent of it. Major home appliances constitute 62 percent, entertainment electronics, 28 percent and small appliances, eight percent.

Even without an ordinance, industry, business and waste managers have started to chip away at this mountain of used equipment. Hence, cross-branch cooperation is of major importance. Schleswig Recycling GmbH in Rendsburg, for instance, has combined with other firms into an umbrella organization, Inter Elektro Recycling GmbH [IER]. IER intends to develop a network of intake centers and recycling facilities that will blanket the FRG. The recycling will be done in various firms. So-called S-facilities will disassemble the equipment and remove harmful materials. "T facilities" will carry out the dismantling and separation of materials, while "MR facilities" will recover metals. Schleswig's first recycling plant based on this model is already in operation in Brunsbüttel. In the words of Schleswig spokesman Stefan Gliwitzki: "The plant recycles everything from electric razors to computers with a recycling rate of 95

percent and is processing 25,000 t annually." That represents nearly half of the electronic scrap occurring in Schleswig-Holstein.

Even major corporations see a market in the recycling of electronic scrap. In mid-January, Telekom, Alcatel SEL, Preussag and Siemens jointly established the Electrorcycling-Anlagen GmbH, headquartered in Goslar. In early 1995, however, only telecommunications scrap materials will be recycled in the recycling plant that will enter into operation in Goslar. Since 1992 a major experiment has been underway already in a pilot facility in Goslar. One of its special successes is that the recycling of the plastics portion constitutes a rather small problem since acrylonitrile-butadiene-styrene [ABS] is prescribed as the plastic for Telekom's telephones. "We therefore have to deal with only a single plastic," emphasizes Georg Froehlich, head of process engineering at Preussag subsidiary Noell in Goslar.

In the new laender, a subsidiary of RWE waste management, R + T Umwelt GmbH, Leipzig, is engaged in this activity. Three disassembly facilities have already been set up. A processing plant is planned for late 1994. According to R + T data, the disassembly facility in Doeberitz, Brandenburg, annually recycles 2,000 t of scrap material with an average recycling rate of 75 percent.

Even the competition in Westphalian Selm is not sleeping. On 10 March, Rethmann Kreislaufwirtschaft GmbH & Co. Kg will open up an electrical parts disposal center. Then more than 100,000 refrigerators, 150,000 TVs, 200,000 cathode ray tubes and nearly 150,000 t of other electrical and electronic equipment are supposed to be processed there annually.

Dieter Tartler from Erlangen university dampens expectations: "So far there is only a small amount of actual recycling of electronic scrap." In fact, in only the rarest of instances is disassembled material reincorporated into the manufacture of electric and electronic equipment.

Only the loop for metals is mostly closed: most of them end up being smelted. Cycling of glasses is considerably more difficult since very different kinds of glasses are included. Stefan Maier, head of the recycling sector at Stuttgart's Zueblin AG emphasizes: "It is only possible to reuse glasses for the manufacture of display screens if the equipment was separated by manufacturer when it was collected." Zueblin environmental engineering together with Nokia Display Technics has developed a method for processing cathode ray tubes. In that process, according to Maier, only one percent of the cumulative amount needs to be disposed of as special waste material any longer. The tubes are crushed, the glass is scrubbed and the remaining amount of solids is pressed into a filter cake. At present, the glass that is removed mostly ends up in the construction or ceramics industry or in the production of radioactive waste shields.

Even the plastics portion complicates recycling because of their diversity. Floor coverings and transportation

palettes are now resulting from the polymers. Where this approach to recycling cannot be used, for example, in the case of plastic casings that contain fire retardants, experts consider chemical recycling the best solution. In this process the plastic is dissolved into its chemical building blocks.

Printed circuit boards, constituting a blend of many materials, are even more of a problem. In Luebben, Brandenburg, BC Berlin Consult is operating an experimental plant based on the Pyrocom process, a combination of thermolysis and incineration. As BC spokeswoman Kerstin Gustmann puts it briefly: "In addition to oil, metals, minerals and solid residues, a gas is recovered as a result and is used for heating the reactor."

Printed circuit boards, above all, are also worrisome for recycling expert Tartler. He tosses out for consideration: "No one can say precisely what materials are contained therein." Erlangen university's research project "recovery of materials from blends of multiple materials," should cast some light in the darkness. The people in Erlangen are betting on a process that combines chemical extraction for separation of metals with a leaching out of the plastics.

Lots of people want to profit from the recycling of electric and electronic scrap material. In Frankfurt, 21 firms have combined in the Federal Organization for Electric and Electronic Recycling Companies [BEVU] to establish uniform recycling standards. In Engen, members of the Federal Association for Electronic and Electric Scrap Material Recycling [BEEV] are pursuing a similar aim. In order to avoid unnecessary competition, both groups are planning to combine under a single umbrella organization. "Then the number of waste managers active in the market will be discernible," says Rainer Koesling of Reichart Metals in Pulheim.

Germany is still taking on a trailblazer role in the recycling of electronic scrap, although there are also initial hints of an EC-wide regulation. According to a report from the federal environmental ministry, a "priority-waste-stream working group" convened for the first time in January and is supposed to draw up recommendations for an EC guideline by mid-1995.

Saxony Changes Approach to Recycling Plastics

94WN0205A Duesseldorf VDI NACHRICHTEN
in German No 8, 25 Feb 94 p 18

[Article by Dieter Mueller: "Cautious Change of Course on Recycling of Plastic Waste Materials"; Subhead: "BASF Bets on Raw-Material Recycling of Packaging Polymers"]

[Text]Ludwigshafen, 25 February 1994—Stricter anti-pollution regulations in the future may make the incineration of plastic waste as expensive as raw-material recycling. In this context, the Ludwigshafen BASF AG plans to expand its new pilot plant for the raw-material processing of used plastic packaging materials into a large-scale complex by 1997 at the latest.

A change of course is in the offing at BASF for the incineration of plastic waste. Dr. Albert Hauss, head of the plastics and environmental department explained recently, for example, at the inauguration of a new technological processing facility in Ludwigshafen: "Aside from the fact that society views incineration as 'annihilation of matter' and therefore disapproves of it, that form of disposal, even in terms of cost now, no longer has any supporting argument."

The basis for this assessment is a cost accounting in the context of the seventeenth ordinance of the federal anti-pollution law for waste incinerators. In Hauss' words, its strict requirements in emission limiting values by now "call for a tripling of capital commitment" for plant investments compared with plants for raw-material recycling. On his estimate, incineration of plastic waste costs DM1200 per ton, including additional costs, sorting and transportation, plus the disposal of the inert residue. "In net terms, therefore, the burning of the packagings remaining in a ton of waste residue is just about as costly as raw-material recycling through separate sorting and recycling."

Recycling burdens, therefore, are no longer an obstacle to a cautious change of attitude toward the production of plastic that is already, in fact, beginning to emerge. Hauss mentioned the inauguration of a pilot plant for raw-material, that is, petrochemical, recycling of waste plastic packaging at the Ludwigshafen location. In that process, plastics (polymers) are again reconverted into their source products (monomers) in such a way that part of them can then again be incorporated in the fresh production of plastics or other petrochemical processes. By 1997 at the latest, BASF plans to expand the pilot plant into a large-scale recycling facility with an annual capacity of 300,000 t. Hourly throughput at that time is likely to be nearly 40 t, meaning that even the appropriate general conditions, logistics, for instance, will have to be in place.

It was also evident in Ludwigshafen that the undertaking now not only postulates the trio of material, raw material and thermal recycling, but also steadily supports and strategically tackles it. It is in these terms, therefore, that the operation of the new 600 m² large technological processing facility has to be viewed. On the basis of specific pilot projects, the material processing of old plastics is supposed to be analyzed at it.

In the words of degreed engineer Volker Hammes, the head of the new technological facility, one of the principal tasks of the technological facility will consist of "providing the cleanest possible, pure or at least free of foreign substances and extrudable bulk material." Furthermore, the plant, that has a maximum capacity of 500 kg/h, is supposed to be used to search for new areas of application for "old plastics from a defined source."

Although it is only in the offing, the introduction of the new technological facility did make it plain that BASF

intends to safeguard and expand its applied technological know-how in the field of plastics recycling with this investment totaling nearly DM3 million (excluding physical plant). Ultimately, the goal is recycled materials having a defined and guaranteed properties profile for which a "certificate of quality" can be issued to the processors. In the future that will be important in terms of producer liability and should not be underestimated. BASF's recycling expert anticipates that, using materials recycling methods, in the future approximately 15-20 percent of the total amount of old plastic "can be converted into worthwhile new applications from an economical and ecological point of view."

Renewal of Packaging Law Encourages Eco-Investment

94WN0211A Duesseldorf VDI NACHRICHTEN
in German No 7, 18 Feb 94 p 2

[Article by R. Helmueller and J. Siebenlist: "Positive Signal for Raw-Material Recycling"; Subheads: "Packaging Ordinance Amendment Should Continue To Expedite Waste Recycling"; "Planned Extension of Quota-Based Goals Allows Time for Creation of Industrial-Scale Recycling Capacity"]

[Text]Duesseldorf, 18 February 1994—Federal environmental minister Prof. Klaus Toepfer intends to use a revised packaging ordinance to continue development of Germany's entry into recycling. In this context, at the Euroforum conference "The Dual System Facing Its Demise?!", recently in Duesseldorf, Dr. Thomas Rummeler explained that the federal government wished to incorporate the experiences of the past two years into the ordinance's amendment. For, although in the view of the deputy department head in the Federal Environmental Ministry [BMU], there had been some problems in the initial phase, the present results demonstrated that something "had gotten off the ground" both in the avoidance and in the recycling of packaging.

Marion Caspers-Merk, however, complains about the proposed bill for a new packaging ordinance: "What federal environmental minister Toepfer has proposed no longer has anything to do with ecological recycling." In the view of the deputy environmental-policy spokesperson for the German Socialist Party's [SPD] parliamentary group, the central thrust of the proposed changes is "to extend the deadlines, lower recycling quotas and allow access to the furnace in recycling." Therefore, it is not ecological necessity but economic wishfulness that is uppermost. The medium-sized business sector came to the conclusion from the disastrous development of Germany's Dual System [DSD] of fashioning an ecologically and economically optimized counter-bill. But instead of allowing the market even into the waste management sector and promoting the ordinance, the DSD continued to be defended.

According to deputy ministerial head Thomas Rummeler, the planned amendment to the new packaging ordinance will allow new chemical (raw material) recycling processes to be used for plastic packaging. The industry

wants to have an annual recycling capacity of 190,000 t by 1995. Therefore the creation of investment security for raw-material recycling processes lies at the core of the respective bill.

According to Rummler this should be achieved with the unambiguous conceptual definition. It was made clear that the raw-material recycling law could be realized not only using conventional recycling processes but also modern chemical recycling processes. The BMU representative opined: "This conceptual clarification will supply the indispensable investment security for firms that want to use the material properties of used plastics, for instance, in the process of hydrogenation or the production of steel."

Petra Rob's judgment of Bonn's change of plans was: "We welcome the fact that the amending of the packaging ordinance redefines and unambiguously defines important concepts." Since, according to the spokesperson for the DSD GmbH, Bonn, raw-material recycling of plastic packaging, for example, through hydrogenation or pyrolysis would be explicitly recognized, industry would be given an important signal "to make the necessary billions in investments in modern recycling plants and technologies."

The amendment bill also provides for packaging consisting of paper/pulp/cardboard, plastic or composite materials, a reduction of the recycling quotas as well as a deferral of the deadlines by which the quotas have to be met. As a result, the currently targeted recycling quota of 60 percent (64 percent up until now) for such retrievable packaging materials will have to be realized only by 1 January 1998 (up until now, 1 July 1995).

According to Rummler this is needed to allow for the development of appropriate recycling capacities. Slight deviations in the quotas, nonetheless, have not led to any substantial changes. As Rummler states: "The pressure on the private sector to build large facilities for raw-material recycling is in no way diminished." This is highlighted not least by the fact that, in the case of plastics, half the recycling quota has to be ensured using material processes. But the amendment also makes it clear that effectively included amounts of packaging exceeding the required materials quotas could be recycled either in the form of matter or energy. However, this would require furnaces having at least a 75 percent efficiency factor.

Proper Use of Fertilizer Protects Drinking Water

94WN0180A Duesseldorf VDI NACHRICHTEN
in German No 5, 4 Feb 94 p 23

[Article by Almut Jandel: "When Experts Fertilize the Soil, the Drinking Water Remains Pure"]

[Text]

For the Fourth Time, the VDI Regional Association of Osnabruck Organizes the Technical Conference "Environmentally Friendly Agriculture"

Ground-water protection requires new thinking in agriculture

Obtaining drinking water in rural areas is impaired to a considerable degree by agriculture. Can pesticide and fertilizer consulting, a water tax, or ecological cultivation methods provide lasting protection for ground water? This question was examined by the Regional Association of Osnabruck.

The requirements of healthy conditions for life include clean air, unpolluted soil and pure water. In most regions, however, the environment has been disturbed by the far-reaching actions of mankind. A matter of concern for the working group on process technology of the VDI Regional Association of Osnabruck is to discuss environmental problems in their own region and to list solution approaches. The conference series of "Environmentally Friendly Agriculture" was initiated from these considerations. The VDI Regional Association, with the Center for the Environment and Technology, and the Osnabruck City Department of Works organized this series for the fourth time. The topic of protecting the ground water was the central theme of the last conference.

Obtaining water in rural areas, e.g., even in the area of Osnabruck, is impaired to a great degree by agriculture. To increase yield, large quantities of nitrate and pesticides are applied to the fields. After a time delay, some of these materials appear in the ground water and must be removed by the water treatment plants at great expense to be able to supply drinking water with the prescribed quality.

What can be done to reduce the introduction of nitrates and pesticides into the ground water? Horst Wieligmann, from the Osnabruck City Department of Works, presented an initiative. The Osnabruck City Department of Works has now purchased fields, stopped the intensive agriculture there and leased the land with a great amount of support for ecological cultivation. "Unfortunately, the market situation for grain, fruit and vegetables cultivated ecologically is so poor that no farmer can be advised to do this," complains Horst Wieligmann about the current situation. Ecological agriculture makes do without pesticides. However, the harvest is poorer than in conventional agriculture, and soil cultivation must be more intensive and incurs greater expense. For the use of fertilizer, balance sheets are drawn up. In these sheets, the quantity of fertilizer used, e.g., liquid manure, is correlated with the consumption of the individual types of grain or plants.

"On a biofarm, nitrogen is always scarce and costs the farmer 5 to 10 Deutsche marks per kg," calculates the farmer Dipl.-Ing. agr. Rudolf Joost-Meyer zu Bakum. He was of the opinion that a reduction of nitrate could be achieved in conventional agriculture if, first, the use of

fertilizer was optimized and, second, mineral nitrogen would become more expensive by 300 to 700%. "Use of nitrogen must be controlled on a market economy basis." Important prerequisites for converting conventional farms are motivation of the farm management, capital for additional technology, market desire, and comprehensive specialized advice.

In Baden-Wurttemberg, a regulation applying uniformly over the entire Land was enacted for the utilization of agricultural fields to protect the ground water. In this way, a legal instrument was created that made it possible to enact regulations based on scientific knowledge as minimum requirements for agriculture and to facilitate the conversion without incurring financial penalties and by means of intensive consultation. Problems that occur can be solved in research projects, model tests and pilot projects. A series of requirements and bans is contained in the regulation. For example, these include a plowing ban for permanent meadowland, restrictions on fertilization and irrigation, and even the restriction of soil cultivation. Only pesticides specified in a positive list may be used.

Conversion of cultivation methods without financial penalties

Jochen Mund is the construction director in Ministry for the Environment of Baden-Wurttemberg. He placed special emphasis on the fact that converting the cultivation methods must occur without economic disadvantages. The regulation ensures a financial compensation of 310.00 Deutsche marks per hectare or a lump sum. The water intake fee (0.10 Deutsche marks/m³), that the Land demands of the water-supply and distribution system, is used for the compensation payments.

Mund says that initial experience with the regulation shows that reducing nitrogen fertilization alone is not sufficient. Additional measures, e.g., reduced soil cultivation, sodding, no fallow land, restrictions in problem areas and culture, are required. Reactions in the ground water, even with this, are not to be expected in the short term. The interplay of many measures and the elimination of many traditional methods will, in the opinion of Jochen Mund, help the regulation achieve the necessary success. "If experts fertilize the corn, the drinking water will remain pure." His motto clearly shows that a great need of optimization exists. Sufficient consultation, controlled tests, optimization of the cultivation method and soil tests before fertilizer is used can lead to a minimization of the nitrate pollution in the ground water over the long term.

In the area of Osnabruck, a cooperative project between agriculture and the water-supply and distribution system, supported by the Land of Lower Saxony, was started in 1991. The goal of this project was to make provisions for ground water protection by advising farmers. This project is being run by the Weser-Ems Chamber of Agriculture and it is being supported financially by the Osnabruck City Department of Works.

Ulrich Wordemann is the agricultural director for the Weser-Ems Chamber of Agriculture. He presented the project. As the starting point, utilization and cultivation conditions were determined on a voluntary basis to make possible optimization of fertilizer use. At the same time, demonstration fields with fertilization appropriate for the need were cultivated so as to show the results of this cultivation to the farmers. Until now, only a few farmers who are regularly keeping field impact card files are participating in this project. These card files are evaluated on a scale greater than a single farm to be able to follow the nutrient cycle. The quick determination of the ammonia concentration in liquid manure that shows the farmer how much fertilizer he has applied has proven to be an important instrument in this project. The object of all these measures is to make the farmer an expert who views ground water protection as a matter of concern to him personally.

Problem of CFC Disposal Still Not Solved *94WN0183A Duesseldorf VDI NACHRICHTEN in German No 6, 11 Feb 94 p 19*

[Article by C. Friedl]

[Text]

Numerous products emit ozone killer

International agreements to eliminate the production and use of ozone-depleting materials suggest that the CFC problem is as good as solved. That appearance is deceiving. Neither recycling nor destruction is regulated for the approximately 2.1 million metric tons of CFCs and halons now in use throughout the world. The first disposal plant will start operation in Germany this summer.

The Federal Republic of Germany will have completed its retirement of CFCs as the first nation in the world during 1994. "CFCs should be retired on a Europe-wide basis by 1997." "Countries that signed the Montreal Protocol want to advance the timetable for this retirement."

This and similar pronouncements provide the impression that the international efforts to find a common solution to the CFC problem are bearing fruit. Chlorofluorocarbons and halons threaten the stratospheric ozone layer. The danger they pose appears to have been eliminated by the Montreal Protocol of 1987 and the more stringent retirement scenarios and step-by-step plans enacted in subsequent years.

"This impression is wrong," contradicts Vivian Sheridan. She is the environmental spokesperson of the American chemical company DuPont. This company was formerly the world's largest producer of CFCs. Upon close inspection, the Montreal Protocol merely regulates the production volume of new CFCs in the signatory countries. On the other hand, it permits the import, export, and even after 1995, the use of recycled CFCs.

Developing countries may manufacture CFCs "for their own use." Finally, the production and sale of new product is possible to the end of the year.

On the other hand, the Montreal Protocol does not regulate the whereabouts of the quantities already produced, stored, and in use. These quantities are considerable. Throughout the world, UN estimates point to about 2 million metric tons of fully halogenated CFCs and 115,000 metric tons of halons that are in use and on the market. For Germany, the UN cites 80,000 metric tons of CFCs used as propellant in rigid expanded polyurethanes, 25,000 metric tons as refrigerant in cooling and refrigerating plants, and 9,000 tons of halons in fire extinguishing systems. In addition, some few 100 metric tons more are used in Germany annually as solvents.

Additional CFCs are released from these sources into the environment. Some of them are legal. Solvents enter the atmosphere within a few months of their application. The same applies to spray cans—where CFCs, for example, are still permitted in medical sprays. The insulating gases from insulating foams diffuse partially over the course of years into the environment. In recycling refrigerators, almost every second unit is disassembled manually at this time. Thomas Engmann is the manager of Electrocycling at the disposal company of Rethmann, Selm. In his estimation, "About 30% of the CFCs enter the atmosphere uncontrolled." Substantial CFC sources are also German landfills. According to a study by the Technical University of Hamburg-Harburg, 200 metric tons of CFCs escape annually from spray cans, plastics and refrigerators in landfills. Up to 40,000 metric tons of the gases are still stored in West German dumps, according to estimates.

In practice, the retreat of CFCs is in no way as orderly or at the speed proclaimed by political pronouncements. "CFCs are the hazardous waste that can be disposed of most easily," explains Dr. Holger Brackemann from the Federal Office of the Environment in Berlin. In other words, opening a valve in an unobserved moment is enough to "dispose of" the materials. This illegal path is taken often, particularly for fire extinguishers and extinguishing systems, suspects Brackemann. According to the CFC Halon Ban, all fire extinguishers and extinguishing systems filled with halon were to have been taken out of operation by 31 December 1993 and the material disposed by way of the Associations. Of the 6000 metric tons still estimated in existing systems in 1992, "only considerably less than 1000 metric tons have been recovered" by today according to Brackemann.

The temperatures in a conventional trash incineration plant are sufficient to crack the CFC propellant R 11. This was shown by experiments in the Tamara test plant of the Nuclear Research Center at Karlsruhe.

If you need CFCs, you can still get them. "The market for secondary product is large and unmanageable," assesses Dr. Peter Schubert. He is a CFC expert for DuPont. In his opinion, a considerable quantity of the ozone killer is still stored by vendors. The conversion of

equipment to alternatives is proceeding at a slow pace. "For example, most users of cooling units or air conditioners choose to use recycled CFCs rather than convert to alternatives," says Schubert. The development of environmentally compatible alternatives and the manufacture of these products, costing millions, have not yet become profitable for the chemical industry. The demand is moderate.

Correspondingly hesitant is the retreat of old CFCs. Schubert estimates that, at this time, around 100 metric tons of refrigerant are purified on site and then refilled annually. An additional 300 metric tons are processed into secondary product. About 700 metric tons arrived at Hoechst AG in Frankfurt for processing in the last year.

Product that is too dirty for redistillation had to be stored until now because destruction capacity was not available. Probably starting this summer, Germany will have its first disposal system available. "The approval has just arrived," says the system developer Dr. Siegmund Hug. Three cracking reactors—originally constructed for purifying exhaust gas from CFC production at Hoechst—are to eliminate 9000 metric tons of CFCs annually when completed.

In this process, the molecules are split in a graphite reactor at 2200 °C to 2500 °C in a hydrogen/oxygen flame. The reaction products—essentially hydrochloric acid, hydrofluoric acid, and carbon dioxide—can be separated from one another in a second step and reused as chemical raw material. "Our system will then be available to all Europe," says Hug. American and Japanese companies have shown interest in obtaining a license, according to Hug.

Besides this, several other methods are undergoing experimentation. Engineers at Maschinen- und Apparatebau Grimma tested plasma cracking a few years ago. Concentric Machines (CM) in Treutlingen has developed the Chemical Reverser that obtains reusable cracking products from CFCs and halons. The American company Process Technologies of Boise Idaho splits the molecules at less than 50 °C using UV radiation. A method of the Tokyo Electric Power and KRI International Inc. of Kyoto is based on the same principle. A mixture of 80% CFCs and 20% oxygen is exposed to a mercury-vapor lamp. UV radiation cracks the CFCs into chlorine gas which is filtered out of the process flow by way of a membrane.

The Industrial Research Institute of Kanagawa Prefecture is rolling out particularly big guns. CFCs, fuel gas, and air are mixed and made to explode in a steel pipe 1 meter in length and 35 mm in diameter. During this process, temperatures of almost 3000 °C are created. Such temperatures, in addition to strong pressure waves, split up to 99.99% of the molecules.

Regarding the possibilities for destroying CFCs and halons, the experts of a working group in the UN Environmental Program (UNEP), the "Technical Advisory Committee (TAC) on the destruction technologies

for ozone-depleting substances," have been racking their brains since 1991. TAC has investigated several dozen possible methods and come to this conclusion. "The only methods available now are based on thermal oxidation." The American Environmental Protection Agency (EPA) had a similar summary. "Incineration is at this time the only large-scale usable technology for destroying CFCs."

Even conventional incineration plants are suitable for CFC destruction. Tests at the "Tamara" incineration plant of the Nuclear Research Center at Karlsruhe (KfK) show that the propellant R-11 from insulating foams is cracked. However, the CFC proportion at the input must always remain limited to a few per cent of the trash because aggressive hydrochloric and hydrofluoric acids are created during incineration.

The development of disposal methods got a late start. The experts agree on this. "In addition," says Brackemann, "More commitment on the part of the chemical industry would have been desirable." One thing is clear. Until adequate disposal capacities are available worldwide, most of the existing CFCs have, either intentionally or not, literally disappeared into thin air. The DuPont expert Schubert can see a positive side to this despite the problems. "Then, we can use the methods to dispose of the CFC alternatives."

Hazardous Waste Exported From Germany to Northern Albania

BR2503163194 Bonn DIE WELT in German 3 Mar 94
p 2

[Text] The environmental scandal surrounding the storage of [former] German Democratic Republic-produced toxic pesticide waste in northern Albania is evidently greater than previously assumed. Environmental protection organizations yesterday warned that entire regions could become contaminated, severely threatening thousands of people. Greenpeace spoke of pesticide-poisoned "chemical lakes."

The Federal Environment Ministry also conceded yesterday that the drums were "improperly" stored. According to Environment Minister Toepfer (CDU [Christian Democratic Union]) there is a total of 4,000 tons of pesticides in Albania, some of it highly toxic, that had been delivered by the World Bank, the European Union, and Germany. One liter of this substance is enough to contaminate two million liters of drinking water.

The toxic waste also includes 217 tons of GDR pesticides, which according to the Environment Ministry in Bonn were exported by Lower Saxony playing card firm Schmidt-Cretan in 1991 and 1992.

Greenpeace claims that at the time the cargo, totaling 790 tons, was declared as "humanitarian aid" to agriculture. The environmental protection group tracked the toxic pesticides down two years ago in wagons of the

eastern German railways. Government agencies in Bonn had known about the drums for years but so far failed to do anything.

According to Toepfer (CDU), the German authorities had so far looked in vain for a World Bank and EU [European Union] disposal program. Toepfer now announced Germany would go for it alone. The possibility of "bringing them back" was currently being examined. He had already sent a team of experts from the Technical Support Service to Albania at the end of December.

Toepfer is considering bringing the drums back to Germany by ship. He is afraid Albania is not an isolated case. Hungary and the Ukraine are also affected.

Meanwhile, Greenpeace yesterday began making the pesticide containers safe. About 20 drums were packed and taken to the Yugoslav border by truck. It describes the situation in some places in northern Albania as catastrophic. "Drums are leaking, a chemical cocktail is seeping into the ground, gasses are escaping," Greenpeace says. People were complaining of burning eyes and breathing difficulties. Drinking water wells were threatened.

Reclamation of Contaminated Soil Extremely Expensive

BR2503162994 Bonn DIE WELT in German 28 Feb 94
p 11

[Article by Frank Elsner: "How Much Ecological Recovery Can There Be in Wismut?—Environment Experts Say GDR Uranium Mining's Legacy of Contamination Will Cost Much More Than 15 Billion German Marks"]

[Text] In the GDR it was a country within a state with its own police and jurisdiction, closely watched by the Soviet secret service: the mining area of the "Soviet-German Wismut Corporation." Over a period of 40 years the USSR [Union of Soviet Socialist Republics] took some 220,000 tons of uranium—the raw material for its military and civilian nuclear programs—from the ore deposits of southern Saxony and Thuringia. Its legacy is Germany's biggest ecological disaster. Environment experts fear that decontaminating it properly will cost far more than the 13 to 15 billion Deutsche marks [DM] officially estimated.

Those who gained from the wasteful exploitation of nature and human beings will not pay the price of it. Bonn inherited the GDR's half of Wismut anyway, and in May 1991 the USSR handed its half over as well—and with it all responsibility for more than 3,000 radioactive waste heaps, 300 shafts and mines and a large number of sludge lagoons containing uranium and radioactive decay products.

The bomb must be defused by the successor company Wismut GmbH. The resources—about DM700 to 800

million a year—will be provided by its sole shareholder, the Federal Ministry of Trade and Industry. Chief executive, Manfred Bergmann, estimates that the ecological repair work will take 10 to 15 years. Then it will be possible to "build kindergartens again" on the contaminated areas. Trade and Industry Minister Rexrodt explains that the "Wismut project" meets "international standards."

Environment experts think otherwise. Munich radiation biologist Edmund Lengfelder says that the GDR's lax radiological protection rules have been perpetuated in the Reunification Treaty for what was once the world's third largest uranium mining area, in particular. According to Gerhard Schmidt of the Darmstadt-based Ecological Institute, the lack of statutory rehabilitation targets such as are standard in the USA is painfully obvious. "Wismut has no measuring stick for its work."

Whether Wismut has the technology to keep the environmental hazards permanently under control is also a matter of controversy. Lengfelder disputes in particular that the radioactive sludge lagoons are securely sealed—a great hazard for the groundwater. "Perfect reclamation" could easily breach the DM100 billion cost limit, the radiation biologist believes: "Bonn must know what quality it wants. It is a political matter."

Worse than that: After thoroughly plundering the uranium stocks, in 1962 Wismut gave all the worthless mining areas back to the respective local authorities. These are now getting not a penny from the pot in Bonn.

UNITED KINGDOM

Law on Vehicle Pollution Not Enforced

94WN0218A London THE DAILY TELEGRAPH
in English 25 Feb 94 p 11

[Article by Jonathan Margolis: "Polluting Cars Escape in Cloud of Confusion"]

[Text] With evidence growing that motor exhaust fumes are behind Britain's asthma epidemic, it has emerged that not a single car, bus or lorry owner has been prosecuted for having a dirty exhaust since it became an offence eight years ago.

Under the Construction and Use Regulations a polluting car owner can be fined up to £1,000 and the owner of a bus or lorry up to £2,500.

Yet only one car driver is believed to have been stopped by police for suspected pollution—an Edinburgh man questioned last year because of his black exhaust. He was charged, however, only with having bald tyres and no insurance.

Although most people breathing in exhaust fumes feel that polluters must be breaking the law, there is widespread ignorance among experts about even the existence of legislation.

An Environment Department press spokeswoman emphatically denied that it is possible to be fined for polluting. Even Friends of the Earth believes drivers of the fume-belching cars are untouchable.

Mr Doug Parr, the environment group's atmosphere and transport campaigner, said he was "pretty sure" a polluting motorist could not be prosecuted.

The recession has led to an estimated one in 10 drivers skimping on car servicing, with buses increasingly spewing black smoke. The link with asthma was highlighted in last week's BBC1 *Panorama* programme and a report from the Parliamentary Office of Science and Technology.

Panorama said that the number of pre-school children with asthma had risen tenfold in 30 years, and that the Government was considering banning cars not fitted with a catalytic converter during smog alerts such as the climatic inversion over London in December 1991, when hospitals were swamped by children suffering from asthma.

A prime reason for lack of prosecution of polluting drivers is bureaucratic gridlock between interested government departments. Only the police and the Vehicle Inspectorate can stop and check polluting cars. Police traffic patrols do not carry testing equipment, however, and the inspectorate has a policy of not prosecuting.

Local authorities, led by Westminster City Council, are lobbying for powers to stop and fine polluting motorists.

Sporadic roadside emission checks on buses, coaches and lorries—but not cars—by the inspectorate have led to around 600 lorry operators a year being warned and 500 bus companies. Owners are given 10 days to adjust their engines.

Vehicle emission checks introduced to the MoT test in 1991 are not working, say some experts. A British chemist, Prof Don Stedman, of Denver University, Colorado, who has studied road pollution in Britain, says drivers with dirty exhausts have learned how to cheat on the test.

Prof Stedman has tested exhausts in 12 countries and says British cities are worse than congested places such as Seoul and Hong Kong.

"We know from testing 100,000 cars in London, Leicester and Edinburgh that half of the pollution comes from eight per cent of cars."

He believes one badly adjusted petrol car can emit 40 times as many pollutants as one clean engine.

Prof Stedman says only fines can persuade polluters to adjust their engines. In Los Angeles, a taxi firm with 75 polluting cabs was fined \$250,000 last April. Many other U.S. cities now prosecute for polluting.

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